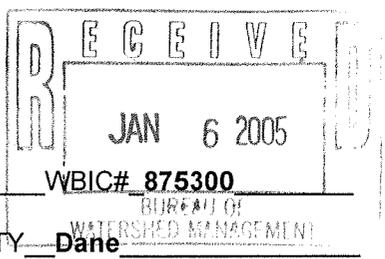


**.FISH AND AQUATIC LIFE DESIGNATED USE FORM**  
(Attach supporting data sheets)



WATERBODY NAME Sugar River  
 REGION SCR BASIN Sugar - Pecatonica COUNTY Dane

Segment Shown on Cross Plains, Middleton, and Verona Quad. Maps

Reference Site(s) \_\_\_\_\_, Attach class. form for ref. site/cond.

**SEGMENT DESCRIPTION** for Segment 1 of 1 (headwater = segment 1)

|   |          |   |
|---|----------|---|
| From: <b>Headwaters</b><br><br>downstream <u>26</u> mi. | lat/long | tn, rng, ¼, ¼, section<br><b>7N, 7E,<br/>SW1/4, NE1/4,<br/>Section 32</b> |
| To: <b>French Town Road</b>                             | lat/long | tn, rng, ¼, ¼, section<br><b>5N, 8E, NW1/4,<br/>SE1/4<br/>Section 22</b>  |

**Attach site map and photos showing stream segment and discharge point**

**DESIGNATED USE INFORMATION:**

New Classification X, Standards Review \_\_\_\_\_, Ref. Site \_\_\_\_\_, Date field work conducted/completed \_\_\_\_\_

Current FAL Designated use WWSF

Existing FAL Use Based on current data Coldwater - A - Class II, Date April, 2004

Recommended Attainable Designated use Coldwater A Class II

Seasonal Designated use(s)/Dates Year Round

Other Applicable Uses: ORW \_\_\_\_\_, ERW X, GL \_\_\_\_\_, GLS \_\_\_\_\_, Drinking Water Supply \_\_\_\_\_, Recreation \_\_\_\_\_, Wild Life \_\_\_\_\_

|  |                       |
|--|-----------------------|
| Submitted By: <i>James F. Anker</i>        | Date: <i>4/5/2004</i> |
| Reviewed By: <i>Greg Sealey</i>            | Date: <i>1/5/05</i>   |
| Approved Basin Leader: <i>Ralph Hansen</i> | Date: <i>4-6-04</i>   |
| WQS Sect. Chief, or Designee:              | Date:                 |

DISCHARGER INFORMATION:

Municipality/Company None, Permit # \_\_\_\_\_

Outfall Location N/A

Contact Person N/A, Contact Date(s) \_\_\_\_\_

Did A Representative Observe Field Work? No \_\_\_\_\_, Yes \_\_\_\_\_

Representative Name \_\_\_\_\_, Date(s) \_\_\_\_\_

Comments about facility, representative's observations, etc.:

**BASIS FOR DESIGNATED USE DECISION** (List and briefly discuss key elements for the decision)

**Send final report to:**

Facility N/A Date: \_\_\_\_\_

Basin Wastewater Eng. N/A Date: \_\_\_\_\_

Limits Calculator: N/A Date: \_\_\_\_\_

Watershed Expert Greg Searle Date: 12/22

Fish and Habitat Expert Scott Stewart Date: 12/22

Bureau of Endangered Resources when these species are present \_\_\_\_\_ Date \_\_\_\_\_

Other interested parties (list) \_\_\_\_\_ Date: \_\_\_\_\_

## LITERATURE REVIEW

1. WDNR, 2000. Proposed Dane County Lakes and Watershed Cold Classification (Devereaux memo to Susan Jones, 10/9/2000)
2. Lyons, John and Lizhu Wang. 1996. Development and Validation of an Index of Biotic Integrity for Coldwater Streams in Wisconsin. North American Journal of Fisheries Management 16:241-256.
3. Hilsenhoff, William L. 1987. An improved biotic index of organic stream pollution. The Great Lakes Entomologist.
4. Gebert, Warren A. and William Krug. 1996. Streamflow Trends in Wisconsin's Driftless Area. Journal of the American Resources Association. 32:4: 733-744.
5. Guidelines for Designating Fish and Aquatic Life Uses for Wisconsin Surface Waters. June 2003. Draft.
6. Steven, Jeffery C. 2002. Sugar River Watershed Fish Survey. Madison Metropolitan Sewerage District.
7. Marshall, Dave and Scot Stewart. 1993. Sugar River Classification Survey. Dane County, Wisconsin. February, 1993. Wisconsin Department of Natural Resources Southern District.

Summarize and interpret the literature available and how it relates to and supports the classification and the recommended designated use: **See narrative.**

**FIELD ASSESSMENT DATA AND OBSERVATIONS**

Assessment dates: 9/3/2002 to 9/6/2002

**PHYSICAL/CHEMICAL DATA**

SEGMENT LENGTH 596 m, DEPTH, AVG. 0.4 m MAX. 0.43 AVG. WIDTH 15 m

SEGMENT GRADIENT \_\_\_\_\_, VELOCITY 0.32 m/sec

SUBSTRATE MATERIAL      %silt 10                      %sand 20                      %gravel 70  
   %rubble \_\_\_\_\_                      %organic \_\_\_\_\_                      %other \_\_\_\_\_

NATURAL FLOW 51.31 cfs, (MEASURED X, ESTIMATED \_\_\_\_\_).

Flow was high X, normal \_\_\_\_\_, low \_\_\_\_\_, very low \_\_\_\_\_

Q7,2 flow \_\_\_\_\_, Q7,10 flow \_\_\_\_\_, estimated \_\_\_\_\_ or measured \_\_\_\_\_

EFFLUENT FLOW:      24 hr. average N/A, measured \_\_\_\_\_, estimated \_\_\_\_\_

Design flow \_\_\_\_\_

TEMPERATURE \_\_\_\_\_, Instantaneous \_\_\_\_\_ or 24 hr. max. average \_\_\_\_\_, Date(s) \_\_\_\_\_

**DISSOLVED OXYGEN:**

Instantaneous \_\_\_\_\_ mg/L, Time of day \_\_\_\_\_, Date \_\_\_\_\_

Continuous:      Minimum \_\_\_\_\_ mg/L, Range \_\_\_\_\_ mg/L to \_\_\_\_\_ mg/L

Dates / time measured: \_\_\_\_\_ to \_\_\_\_\_, total = \_\_\_\_\_ hrs.

**CHEMICAL DATA COLLECTED:**

**BREIF INTERPRETATION/COMMENTS:** The physical data (width, depth, flow) represents the lower portion of the stream segment. Since the 26 mile segment begins at the headwaters, obvious differences are going to occur as one proceeds downstream. Flows increase and substrate changes. Upper segments of the river are smaller (approximately 2-5 meters wide, substrate varies from silt/clay bottom to gravel riffle areas. Temperature data collected between December 2001 and June 2003 at 3 sites on the river showed a range of temperatures between 0 and 26.2°C. The instantaneous and mean daily maximum temperatures were generally within the guidelines of a cold water system (see narrative).

**BIOLOGICAL DATA**

**FISH:** Sampling date 9/3 to 9/6, 2002, Attach species list and IBI forms if applicable

Survey Location(s) 10 stations beginning at Frenchtown Road and at road crossings upstream to the headwaters area. See narrative for details.

Distance sampled 4373 m (total) Sampling Gear Stream Shocker No. of species 31, Total fish 9393

No. of species not listed as tol. to low DO 23, Total fish 3585, % not listed 38

Endangered or other special category species \_\_\_\_\_

Warm B species \_\_\_\_\_, Total no. \_\_\_\_\_

**MACROINVERTEBRATES:** Sampling date 11/14/2002, HBI/FBI 4.49 (Good)

Survey location(s) 210 meters upstream of Frenchtown Road

Sampling Procedure Kick net

< 100 organisms found, list dominant genera, numbers and HBI values:

> 100 organisms found, attach taxonomy bench sheet or other analyses:

**See attached.**

% individuals with HBI value 5 or less 85

**OTHER BIOLOGICAL DATA/OBSERVATIONS:**

**INTERPRETATIONS BASED ON EXISTING FISH AND AQUATIC LIFE COMMUNITY: See Narrative**

**HABITAT**

Procedure \_\_\_\_\_

Habitat rating \_\_\_\_\_, attach habitat rating forms

Significant problems affecting use attainment:

low flow \_\_\_\_\_ sedimentation \_\_\_\_\_ bank erosion \_\_\_\_\_ ditching \_\_\_\_\_ fish cover \_\_\_\_\_ depth \_\_\_\_\_

Other \_\_\_\_\_

**Observations About Habitat Quality:**

**WATERSHED DATA AND OBSERVATIONS**

**AREA**

Approximate size 80 sq. miles

Land use: % crop land 60, % pasture 0.80, % forest 12,

% grass land 11, % urban 5, % wetland 5,

No. feedlots/barn yards near stream \_\_\_\_\_

Other NPS \_\_\_\_\_

Is this watershed currently or proposed to receive NPS management under a State, Federal or local organization? Yes \_\_\_\_\_, no x. List dates and explain:

Discuss NPS impacts and controllability, and NPS relationship to fish and aquatic life existing and attainable uses. Include factors such as bank erosion, land cover/use near stream, gully erosion, barn yards, etc. (attach additional sheets if required):

**THIS PAGE MUST BE COMPLETED WHEN THE RECOMMENDED DESIGNATED USE IS TOLERANT FISH AND AQUATIC LIFE OR VERY TOLERANT AQUATIC LIFE.**

RECOMMENDED DESIGNATED USE     N/A    

**Tolerant and Very Tolerant Designated uses**

**Tolerant Fish and Aquatic Life and Very Tolerant Aquatic Life designated uses are not defined as full fish and aquatic life uses. In most cases an TFAL or VTALuse is the best that can be attained by these resources due to natural habitat or water quality limitations. A designated use recommendation into one of these sub-categories must be based on one or more of the following factors (s. 283.15(4), Stats.). Check all that apply to this designated use and provide a brief description of the situation:**

- a. **Naturally occurring pollutant concentrations prevent the attainment of a full fish and aquatic life community.**
- b. **Natural, ephemeral, intermittent or low flow conditions or water levels prevent the attainment of a full fish and aquatic life community, unless these conditions may be compensated for by the discharge of sufficient volume of effluent discharges without violating water conservation requirements.**
- c. **Human caused conditions or sources of pollution prevent the attainment of a full fish and aquatic life community and cannot be remedied or would cause more environmental damage to correct than to leave in place.**
- d. **Dams, diversions or other types of hydrologic modifications preclude the attainment of a full fish and aquatic life community, and it is not feasible to restore the water body to its original condition or to operate such modification in a way that would result in the attainment of a full fish and aquatic life community.**
- e. **Physical conditions related to the natural features of the water body, such as the lack of proper substrate, cover, flow, depth, pools, riffles, and the like, unrelated to water quality, preclude attainment of a full fish and aquatic life community.**

**DESCRIPTION:**

**THIS PAGE MUST BE COMPLETED WHEN THE RECOMMENDED DESIGNATED USE IS TOLERANT FISH AND AQUATIC LIFE OR VERY TOLERANT AQUATIC LIFE.**

RECOMMENDED DESIGNATED USE     N/A    

**Tolerant and Very Tolerant Designated uses**

Tolerant Fish and Aquatic Life and Very Tolerant Aquatic Life designated uses are not defined as full fish and aquatic life uses. In most cases an TFAL or VTAL use is the best that can be attained by these resources due to natural habitat or water quality limitations. A designated use recommendation into one of these sub-categories must be based on one or more of the following factors (s. 283.15(4), Stats.). Check all that apply to this designated use and provide a brief description of the situation:

- a. Naturally occurring pollutant concentrations prevent the attainment of a full fish and aquatic life community.
- b. Natural, ephemeral, intermittent or low flow conditions or water levels prevent the attainment of a full fish and aquatic life community, unless these conditions may be compensated for by the discharge of sufficient volume of effluent discharges without violating water conservation requirements.
- c. Human caused conditions or sources of pollution prevent the attainment of a full fish and aquatic life community and cannot be remedied or would cause more environmental damage to correct than to leave in place.
- d. Dams, diversions or other types of hydrologic modifications preclude the attainment of a full fish and aquatic life community, and it is not feasible to restore the water body to its original condition or to operate such modification in a way that would result in the attainment of a full fish and aquatic life community.
- e. Physical conditions related to the natural features of the water body, such as the lack of proper substrate, cover, flow, depth, pools, riffles, and the like, unrelated to water quality, preclude attainment of a full fish and aquatic life community.

DESCRIPTION:

Instructions: Bold fields must be completed.

**Station Summary**

|                                      |                                    |                          |                          |   |
|--------------------------------------|------------------------------------|--------------------------|--------------------------|---|
| Waterbody Name<br><b>SUGAR RIVER</b> | Waterbody ID Code<br><b>875300</b> | Site Mile<br><b>65.4</b> | Station No.<br><b>11</b> | Sample ID (YYYYMMDD-CY-FD)<br><b>2002 11 14 13 02</b> |
|--------------------------------------|------------------------------------|--------------------------|--------------------------|---|

|  |                       |                    |                      |                        |                  |
|--|-----------------------|--------------------|----------------------|------------------------|------------------|
| Starting Location<br><b>210 m upstream Frenchtown RD</b> | Township<br><b>5N</b> | Range<br><b>8E</b> | Section<br><b>22</b> | 1/4 - 1/4<br><b>NW</b> | 1/4<br><b>SE</b> |
|--|-----------------------|--------------------|----------------------|------------------------|------------------|

|   |  |  |  |                                     |
|---|--|--|--|-------------------------------------|
| Latitude - Longitude Determination Method Used<br><b>GPS-Garmin III</b> |  |  |  | Datum Used<br><b>NAD 27 CENTRAL</b> |
|---|--|--|--|-------------------------------------|

|   |  |                   |                    |                                     |
|---|--|-------------------|--------------------|-------------------------------------|
| Start Latitude <b>29.8"</b><br><b>42° 53.496'</b> | Start Longitude <b>14.3"</b><br><b>89° 31.738'</b> | End Latitude<br>/ | End Longitude<br>/ | 7.5" Quad Map Name<br><b>VERONA</b> |
|---|--|-------------------|--------------------|-------------------------------------|

|                                  |                                      |                       |
|----------------------------------|--------------------------------------|-----------------------|
| Basin Name<br><b>SUGAR RIVER</b> | Watershed Name<br><b>SUGAR RIVER</b> | County<br><b>DANE</b> |
|----------------------------------|--------------------------------------|-----------------------|

**Sample and Site Descriptors**

|  |  |
|--|--|
| Sample Collector (Last Name, First)<br><b>HIMEBAUCH, JASON</b> | Project Name<br><b>BASELINE MONITORING</b> |
|--|--|

Sampling Device

Kick Net     
  Surber Sampler     
  Eckman  
 Ponar     
  Artificial Substrate     
  Hess Sampler     
  Other: \_\_\_\_\_

Habitat Sampled

Riffle     
  Run     
  Pool  
 Microhabitat     
  Shoreline Composite     
  Proportionally-Sampled Habitat  
 Littoral Zone     
  Profundal Zone     
  Wetland

|  |   |  |                                    |
|--|---|--|------------------------------------|
| Total Sampling Time (min)<br><b>2m</b> | Estimated Area Sampled (m <sup>2</sup> )<br><b>3m<sup>2</sup></b> | Number of Samples in Composite<br><b>1</b> | Replicate No. <b>1</b> of <b>1</b> |
|--|---|--|------------------------------------|

Reason for Sampling

Least Impacted Reference     
  Baseline     
  Impact / Treatment Site  
 Control Site     
  Trend     
  Other: \_\_\_\_\_

|   |                               |                  |                    |              |                       |                 |
|---|-------------------------------|------------------|--------------------|--------------|-----------------------|-----------------|
| Water Color<br><input checked="" type="checkbox"/> Clear <input type="checkbox"/> Turbid <input type="checkbox"/> Stained | Water Temp. (C)<br><b>7°C</b> | D.O. (mg/l)<br>/ | D.O. (% sat.)<br>/ | pH (su)<br>/ | Turbidity (NTUs)<br>/ | TDS (mg/l)<br>/ |
|---|-------------------------------|------------------|--------------------|--------------|-----------------------|-----------------|

|                              |                          |   |   |
|------------------------------|--------------------------|---|---|
| Conductivity (umhos/cm)<br>/ | Stream Order<br><b>3</b> | Stream Gradient (m/km)<br><b>1.03m/km</b> | Estimated Stream Velocity (mps)<br><input type="checkbox"/> Slow <input type="checkbox"/> Moderate <input checked="" type="checkbox"/> Fast |
|------------------------------|--------------------------|---|---|

|  |  |   |
|--|--|---|
| Measured Velocity (mps)<br><b>1.45 m<sup>3</sup>/sec</b> | Average Stream Depth (m)<br><b>.5m</b> <b>1.6'</b> | Average Stream Width (m)<br><b>15m</b> <b>49.2'</b> |
|--|--|---|

Composition of Substrate Sampled (Percent):

Bedrock: \_\_\_\_\_ Boulders (261 mm - 4.1 m dia.): \_\_\_\_\_ Rubble (65 - 260 mm dia.): **50** Gravel (2 - 64 mm dia.): **45**  
 Sand: **5** Clay: \_\_\_\_\_ Silt: \_\_\_\_\_ Muck: \_\_\_\_\_ Overhanging Vegetation: \_\_\_\_\_  
 Aquatic Macrophytes: \_\_\_\_\_ Leaf Snags: \_\_\_\_\_ Course Woody Debris: \_\_\_\_\_ Other ( ): \_\_\_\_\_

|   |   |
|---|---|
| Embeddedness of Substrate at Sample Site (%)<br><b>0%</b> | Canopy Cover at Sample Site (%)<br><b>40%</b> |
|---|---|

# Macroinvertebrate Field Data Report

Form 3200-081 (R 5/00)

Page 2 of 2

## Stream and Watershed Descriptors

N = Not a problem

U = Present, but uncertain as to degree of impact

P = Present, and probably creating a problem

Blank = Uncertain

| Factors that may be Influencing Water Resource Integrity | Watershed |   | Factors that may be Influencing Water Resource Integrity | Watershed |   |
|--|-----------|---|--|-----------|---|
|  | Local     |   |  | Local     |   |
| <b>Biological</b>  |           |   | <b>Chemical</b>  |           |   |
| Macrophytes  |           |   | Chlorine   |           |   |
| Filamentous Algae  |           |   | Organic Toxics   |           |   |
| Planktonic Algae   |           |   | Inorganic Toxics   |           |   |
| Diatoms / Periphyton                                     |           |   | Nutrients  | U         | U |
| Slimes   |           |   | Dissolved Oxygen   |           |   |
| Iron Bacteria  |           |   | Other - Specify:   |           |   |
| Exotics - Specify:                                       |           |   | <b>Sources of Stream Impacts</b>                         |           |   |
| Other - Specify:   |           |   | Urban NPS  |           |   |
| <b>Physical</b>  |           |   | Construction Erosion                                     |           |   |
| Sludge   |           |   | Point Source - Specify:                                  |           |   |
| Thermal  |           |   | Cropland Erosion   |           | U |
| Turbidity  | U         |   | Pasturing  |           | U |
| Sedimentation / Channel Aggradation                      |           |   | Bank Erosion   |           | U |
| Hydraulic Scour / Channel Incision                       |           |   | Barnyard Run-Off   |           | U |
| Bank Erosion   |           | U | Tile Drainage - Organic Soils                            |           |   |
| Upstream Channelization                                  |           |   | Tile Drainage - Mineral Soils                            |           |   |
| Local Channelization                                     |           |   | Septic Systems   |           |   |
| Low Flow   |           |   | Tributary(s)   |           |   |
| Upstream Impoundment                                     |           |   | Springs  |           |   |
| Downstream Impoundment                                   |           |   | Wetland Drainage   |           |   |
| Other - Specify:   |           |   | Other - Specify:   |           |   |

Comments

Special Instructions for Laboratory

| For Lab Use Only                      |  |  |
|---------------------------------------|--|--|
| Sample Sorter<br><i>McKernberg, J</i> | Taxonomist<br><i>Dimick, J</i>                       | Estimated Percent of Sample Sorted<br><i>27%</i> |
| Date Processed<br><i>01/20/03</i>     | Specimens Saved<br><i>NBI subset in AEC archives</i> |  |

20021114-13-02

Sugar River

| Taxa                                    | Taxonomic Key Used | Organism ID # | Organism Count |       |       |
|---|--------------------|---------------|----------------|-------|-------|
|   |                    |               | Rep 1          | Rep 2 | Rep 3 |
| <i>Pteronarcys</i> sp.                  | I                  |               | 1              |       |       |
| <i>Taeniopteryx</i> sp.                 | -I                 |               | 6              |       |       |
| <i>Leptagenia diabasia</i>              | I                  |               | 1              |       |       |
| <i>Stenonema</i> sp.                    | X-III              |               | 19             |       |       |
| <i>S. terminatum</i>                    | -                  |               | 5              |       |       |
| <i>Brachycentrus numerosus</i>          | II                 |               | 2              |       |       |
| <i>Cheumatopsyche</i> sp.               | 8-11               |               | 32             |       |       |
| <i>Hydropsyche</i> sp.                  | I                  |               | 1              |       |       |
| <i>H. bebbeni</i>                       | I                  |               | 1              |       |       |
| <i>Ceratopsyche</i> sp.                 | III                |               | 3              |       |       |
| <i>C. bronha</i>                        | X-11               |               | 12             |       |       |
| <i>C. morosa bifida</i>                 | X-1                |               | 16             |       |       |
| <i>Abitaphia minima</i>                 | I                  |               | 1              |       |       |
| <i>Optiosewvus</i> sp.                  | II                 |               | 2              |       |       |
| <i>O. fastidius</i>                     | 0-                 |               | 25             |       |       |
| <i>Stenelmis renata</i>                 | II                 |               | 2              |       |       |
| <i>Gammarus pseudolimnaeus</i>          | X-III              |               | 14             |       |       |
| <i>Orthocladinae</i> pupa               | I                  |               | 1              |       |       |
| <i>Polypedilum</i> sp. <i>convictum</i> | I                  |               | 1              |       |       |

\*\*\* SOUTH CENTRAL DISTRICT BIOTIC INDEX REPORT \*\*\*

Sample: 20021114-13-02 (YYYYMMDD-Co-Field#) Reference Site: NO  
 Waterbody: SUGAR RIVER Master Waterbody #: 0875300  
 Project: BASELINE MONITORING Storet Station:  
 Collector: HIMEBAUCH, JASON Time Sampling: 2.0 MIN # Reps: 1  
 Sampling Device: 1. D Frame  
 Taxonomist: DIMICK, J.  
 Sorter: WEHRENBURG, J.

% Sample Sorted: 27

Location-Legal: NW SE S22 T 5N R 8E County: DANE  
 Lat/Long: N42deg 53min 29.8sec W 89deg 31min 44.3sec  
 Method: GPS - GARMIN III  
 Description: 210 M UPSTREAM FRENCHTOWN RD.

| General | HBI   | Width<br>ft | Depth<br>ft | Temp<br>1/2 C | DO<br>mg/l | Measured<br>Vel fps | Est<br>Velocity<br>fps | Habitat   |
|---------|-------|-------------|-------------|---------------|------------|---------------------|------------------------|-----------|
| Rep #1  | 4.488 | 49.2        | 1.6         | 7.0           |            |                     | Fast (1.5- > )         | 1. Riffle |
| Rep #2  | 0.000 |             |             |               |            |                     |                        |           |
| Rep #3  | 0.000 |             |             |               |            |                     |                        |           |
| Rep #4  | 0.000 |             |             |               |            |                     |                        |           |
| Rep #5  | 0.000 |             |             |               |            |                     |                        |           |

Aquatic Vegetation 0 % of Total Stream Channel at Sampling Site

Substrate at Rep Location %:

| Rep #  | Bedrock | Boulders | Rubble | Gravel | Sand | Silt | Clay | Detritus | Muck | Debris/Veg |
|--------|---------|----------|--------|--------|------|------|------|----------|------|------------|
| Rep #1 | 0.0     | 0.0      | 0.0    | 0.0    | 0.0  | 0.0  | 0.0  | 0.0      | 0.0  | 0.0        |
| Rep #2 | 0.0     | 0.0      | 0.0    | 0.0    | 0.0  | 0.0  | 0.0  | 0.0      | 0.0  | 0.0        |
| Rep #3 | 0.0     | 0.0      | 0.0    | 0.0    | 0.0  | 0.0  | 0.0  | 0.0      | 0.0  | 0.0        |
| Rep #4 | 0.0     | 0.0      | 0.0    | 0.0    | 0.0  | 0.0  | 0.0  | 0.0      | 0.0  | 0.0        |
| Rep #5 | 0.0     | 0.0      | 0.0    | 0.0    | 0.0  | 0.0  | 0.0  | 0.0      | 0.0  | 0.0        |

Substrate Sampled %: (Same as Above NO )

| Rep #  | Bedrock | Boulders | Rubble | Gravel | Sand | Silt | Clay | Detritus | Muck | Debris/Veg |
|--------|---------|----------|--------|--------|------|------|------|----------|------|------------|
| Rep #1 | 0.0     | 0.0      | 50.0   | 45.0   | 5.0  | 0.0  | 0.0  | 0.0      | 0.0  | 0.0        |
| Rep #2 | 0.0     | 0.0      | 0.0    | 0.0    | 0.0  | 0.0  | 0.0  | 0.0      | 0.0  | 0.0        |
| Rep #3 | 0.0     | 0.0      | 0.0    | 0.0    | 0.0  | 0.0  | 0.0  | 0.0      | 0.0  | 0.0        |
| Rep #4 | 0.0     | 0.0      | 0.0    | 0.0    | 0.0  | 0.0  | 0.0  | 0.0      | 0.0  | 0.0        |
| Rep #5 | 0.0     | 0.0      | 0.0    | 0.0    | 0.0  | 0.0  | 0.0  | 0.0      | 0.0  | 0.0        |

|                           |                            |                     |   |
|---------------------------|----------------------------|---------------------|---|
| Water Quality Indicators: | NP=Not Present             | Pollutant Sources:  |   |
| Turbidity                 | I=Insignificant            | Livestock Pasturing | * |
| Chlorine/Toxic Scour      | S=Significant              | Barnyard Runoff     | * |
| Macrophytes               |                            | Cropland Runoff     | * |
| Filamentous Algae         | Factors Affecting Habitat: | Tile Drains         | * |
| Planktonic Algae          | Sludge Deposits            | Septic Systems      | * |
| Slimes                    | Silt and Sediment          | Streambank Erosion  | * |
| Iron Bacteria             | Channel Ditching           | Urban Runoff        | * |
| Perceived Water Quality   | Impoundments               | Construction Runoff | * |
| at Site:                  | Low Flows                  | Point Source (Spec) | * |
| Comments:                 | Wetlands                   | Other (Specify)     | * |
|                           | Comments:                  | Comments:           |   |

\*\*\* SOUTH CENTRAL DISTRICT BIOTIC INDEX REPORT \*\*\*

MPLE ID# 20021114-13-02

PAGE 1

| *** TAXA ***     | SPECIES<br>STATUS<br>CODE | TAXA<br>KEY<br>USED | TOL<br>VAL | ORGANISM<br>ID | ORGANISM<br>COUNT | REP1 | REP2 | REP3 |
|------------------|---------------------------|---------------------|------------|----------------|-------------------|------|------|------|
| PLECOPTERA       |                           |                     |            |                |                   |      |      |      |
| PTERONARCYIDAE   |                           |                     |            |                |                   |      |      |      |
| PTERONARCYS      |                           |                     |            |                |                   |      |      |      |
| **UNIDENTIFIED** | *1                        |                     | 0.00       | 01070100       | 1                 | 0    | 0    |      |
| TAENIOPTERYGIDAE |                           |                     |            |                |                   |      |      |      |
| TAENIOPTERYX     |                           |                     |            |                |                   |      |      |      |
| **UNIDENTIFIED** | *1                        |                     | 2.00       | 01080300       | 6                 | 0    | 0    |      |
| EPHEMEROPTERA    |                           |                     |            |                |                   |      |      |      |
| HEPTAGENIIDAE    |                           |                     |            |                |                   |      |      |      |
| HEPTAGENIA       |                           |                     |            |                |                   |      |      |      |
| DIABASIA         |                           |                     |            |                |                   |      |      |      |
|                  | *2                        |                     | 3.00       | 02060301       | 1                 | 0    | 0    |      |
| STENONEMA        |                           |                     |            |                |                   |      |      |      |
| **UNIDENTIFIED** | *1                        |                     |            | 02060600       | 19                | 0    | 0    |      |
| TERMINATUM       | *2                        |                     | 4.00       | 02060607       | 5                 | 0    | 0    |      |
| TRICHOPTERA      |                           |                     |            |                |                   |      |      |      |
| BRACHYCENTRIDAE  |                           |                     |            |                |                   |      |      |      |
| BRACHYCENTRUS    |                           |                     |            |                |                   |      |      |      |
| NUMEROSUS        |                           |                     |            |                |                   |      |      |      |
|                  | *3                        |                     | 1.00       | 04010103       | 2                 | 0    | 0    |      |
| HYDROPSYCHIDAE   |                           |                     |            |                |                   |      |      |      |
| CHEUMATOPSYCHE   |                           |                     |            |                |                   |      |      |      |
| **UNIDENTIFIED** | *1                        |                     | 5.00       | 04040100       | 32                | 0    | 0    |      |
| HYDROPSYCHE      |                           |                     |            |                |                   |      |      |      |
| **UNIDENTIFIED** | *1                        |                     |            | 04040200       | 1                 | 0    | 0    |      |
| BETTENI          | *4                        |                     | 6.00       | 04040201       | 1                 | 0    | 0    |      |
| CERATOPSYCHE     |                           |                     |            |                |                   |      |      |      |
| **UNIDENTIFIED** | *1                        |                     |            | 04040700       | 3                 | 0    | 0    |      |
| BRONTA           | *4                        |                     | 5.00       | 04040703       | 12                | 0    | 0    |      |
| MOROSA BIFIDA    | *4                        |                     | 6.00       | 04040704       | 16                | 0    | 0    |      |
| COLEOPTERA       |                           |                     |            |                |                   |      |      |      |
| ELMIDAE          |                           |                     |            |                |                   |      |      |      |
| DUBIRAPHIA       |                           |                     |            |                |                   |      |      |      |
| MINIMA           |                           |                     |            |                |                   |      |      |      |
|                  | *5                        |                     | 5.00       | 07020202       | 1                 | 0    | 0    |      |
| OPTIOSERVUS      |                           |                     |            |                |                   |      |      |      |
| **UNIDENTIFIED** | *5                        |                     | 4.00       | 07020500       | 2                 | 0    | 0    |      |
| FASTIDITUS       | *5                        |                     | 4.00       | 07020501       | 25                | 0    | 0    |      |
| STENELMIS        |                           |                     |            |                |                   |      |      |      |
| CRENATA          |                           |                     |            |                |                   |      |      |      |
|                  | *5                        |                     | 5.00       | 07020601       | 2                 | 0    | 0    |      |
| DIPTERA          |                           |                     |            |                |                   |      |      |      |
| ORTHOCLADIINAE   |                           |                     |            |                |                   |      |      |      |
| **PUPAE**        | *6                        |                     |            | 08300001       | 1                 | 0    | 0    |      |
| CHIRONOMINI      |                           |                     |            |                |                   |      |      |      |
| POLYPEDILUM      |                           |                     |            |                |                   |      |      |      |
| NR. CONVICTUM    |                           |                     |            |                |                   |      |      |      |
|                  | *7                        |                     | 5.00       | 08323425       | 1                 | 0    | 0    |      |
| AMPHIPODA        |                           |                     |            |                |                   |      |      |      |
| GAMMARIDAE       |                           |                     |            |                |                   |      |      |      |
| GAMMARUS         |                           |                     |            |                |                   |      |      |      |
| PSEUDOLIMNAEUS   |                           |                     |            |                |                   |      |      |      |
|                  | *8                        |                     | 4.00       | 09010201       | 14                | 0    | 0    |      |

\*\*\* SOUTH CENTRAL DISTRICT BIOTIC INDEX REPORT \*\*\*

MPLE ID# 20021114-13-02

PAGE 2

| *** TAXA *** | SPECIES TAXA | TOL ORGANISM | ORGANISM |       |      |      |
|--------------|--------------|--------------|----------|-------|------|------|
|              | STATUS KEY   | VAL          | ID       | COUNT |      |      |
|              | CODE USED    |              |          | REP1  | REP2 | REP3 |

\*\*\* TOTALS: \*\*\* 145

0

\*\*\* BIOTIC INDEX: \*\*\* 4.488

0

Taxonomic Key Code Ref:

- \*1 Hilsenhoff 1995
- \*2 Hilsenhoff 1995,82
- \*3 Hilsenhoff 1985b
- \*4 Schmude, Hils. 1986
- \*5 Hils., Schmude 1992
- \*6 Coffman 1986
- \*7 Narf 1989
- \*8 Holsinger 1972

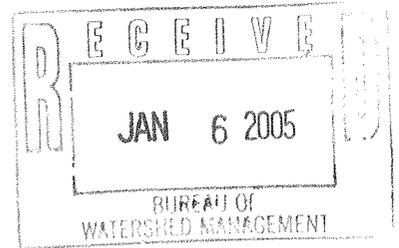
Species Status Codes:

Stream Reclassification

**(Upper) Sugar River**

Sugar-Pecatonica Rivers Basin  
Upper Sugar River Watershed (SP15)  
WBIC # 875300

Submitted by James F. Amrhein  
Wisconsin Department of Natural Resources  
South Central Region Headquarters  
April, 2004



**INTRODUCTION**

The Sugar River begins in west central Dane County and flows over 100 miles southeastward where it joins the Pecatonica River in Winnebago County, Illinois. The entire 91 mile stretch that flows through Wisconsin is currently classified as a Warm Water Sport Fishery (Diverse Fish and Aquatic Life – Gamefish Community). Additionally, the river is designated as an Exceptional Resource Water (ERW) from its headwaters down to the Rock County line. In Dane County, the Sugar River is a low gradient stream (4.1 ft./mi) originating in Section 31 of Township 7, Range 7 East. Approximately 30.2 miles of river drain the Upper Sugar River Watershed to a dam in the Village of Belleville. The dam impounds water that forms Lake Belleview.

Historically, the headwaters of the upper river was home to a variety of forage species such as white sucker, brook stickleback, and dominated by high numbers of mottled sculpin (DNR 1970, 1983). Further downstream species numbers increased to include larger fish and game species reflecting the increased size of the river. Carp, redhorse, green sunfish, walleye and black crappie were found in the lower sections from Riverside Road to Lake Belleview. Smallmouth bass were the dominant game species in the river up until the early 1990's. Brown trout were occasionally found, probably migrating to the river from some of the other coldwater tributaries in the area (DNR, 1970, 1983 and Marshall, 1993).

Since the mid-1980's land use in the watershed has improved due to a PL-566 watershed project, enrollment of farmlands in the Conservation Reserve Program, several streambank improvement projects, and elimination of direct industrial discharges (Marshall, 1993). The upper section of river (upstream from Frenchtown Road) has evolved to the point where it can sustain a cold water fishery. In 1992, an extensive survey of the river was conducted on 13 sections from Frenchtown Road up to the headwaters (Marshall, 1993). Forty-three brown trout were captured during this survey along with 27 other species. Mottled sculpin were found in 11 of the 13 stations. In 1997, a survey was conducted at 6 stations on the upper river. A total of 104 brown trout and 992 mottled sculpin were collected. The most recent survey was conducted in

September, 2002 and is described below. Department personnel conducting the survey were Jim Amrhein, Mike Sorge, Kurt Welke, Jason Himebauch, John Simonsen, and Laura Canny.

#### STUDY AREA (2002)

The upper 26 miles of the Sugar River were evaluated at 10 sites (sites 2-11) between September 3<sup>rd</sup> and September 6<sup>th</sup>, 2002 (Figure 1a-1c). The furthest downstream location was Frenchtown Road (site 11) and the furthest upstream site was Valley Spring Road (site 2). The length of each segment sampled varied (see Appendix 1), but was at least 35 times the mean stream width in accordance with the baseline protocol for monitoring streams (Simonsen, 1994). Because the study area is so large, the stream morphology changes dramatically from headwaters to the lower end. Mean stream width at the headwaters is approximately 2-3 meters whereas the mean stream width at the lower end varies between 10 and 20 meters. The upper end generally contains long runs with silt/sand bottom and grasses/shrubs along the banks. This portion of the river is also buffered by riparian wetlands, particularly the reaches upstream of Valley Road. The lower end contains runs, pools, and riffles with bottoms varying from silt to gravel/cobble and the riparian corridor is a mix of agriculture, forest, grassland, and some wetlands. The topography of the entire watershed is generally flat with low rolling hills on the edge of the terminal moraine.

Fish shocking using a stream shocker was conducted at all sites. Three anode probes were used on the larger river sections below Valley Road. Two anode probes were used at all sites upstream from Valley Road. Additionally, a habitat evaluation, flow measurement, and macroinvertebrate sample was taken upstream from Frenchtown Road (site 11). Water temperatures were measured on an hourly basis at Paulson Road, State Highway 69, and County Highway A for a period from December, 2001 to June, 2003.

#### OBSERVATIONS AND DISCUSSION

The Sugar River contains a variety of game, rough, and forage fish, particularly in the stretch below the confluence with Badger Mill Creek (Table 1). The upper sections (Stations 2-6) contain a species dynamic similar to some cold water streams found in southwestern Dane County. With the exception of white suckers, only occasional eurythermal species were found. Mottled sculpin, an intolerant coolwater species, was generally the most common species found. At sites 2-5, mottled sculpin and white sucker were about equal in number of fish collected. Beginning at Station 6 and moving downstream, white sucker dominated the fish assemblage, making up nearly 50% of the total fish collected. From Station 7 to 11, mottled sculpin populations decreased dramatically to the point where they were not found at Frenchtown Road. The reason for this decrease is unknown. Water temperatures were fairly consistent at all sites. Perhaps the proliferation of other species dominated the sculpins in these lower areas.

After the 1997 survey, a Coldwater Index of Biotic Integrity (IBI) developed by Lyons (1996) was determined for each section. Coldwater IBI scores ranged from 10 (poor) to 40 (fair). The IBI was affected to some extent by the number of white sucker that were

found along side the sculpin, as well as a lack of top level carnivores, especially brook trout, in the upper sections.

Brown trout, a coldwater species, was found at all stations in the 2002 survey. A total of 625 trout were collected. Catch per unit effort (CPUE) estimates (number of trout sampled/length of segment) increased steadily from upstream to downstream and peaked at an estimated 663 trout per mile at Station 10. Coldwater IBI scores ranged from 10 (poor) to 40 (fair). There was no trend in score from upstream to downstream.

Progressive surveys conducted on the upper reaches have noted a trend toward more cold water species. While mottled sculpin, a coolwater indicator species, have been noted in the Sugar River and as a primary species in the headwaters since the late 1960's (WDNR, unpublished data), it has only been within the last 10 years that brown trout have shown up in increasing abundance throughout this stretch of river. Since brown trout are not stocked in the Sugar River, they are either immigrating from several of the cold water tributaries, or are naturally reproducing in the river. The size distribution shows that this section of the Sugar River contains at least 4 year classes of trout – typical of a Class II trout water (Figure 2).

Temperature data:

Temperatures were recorded on an hourly basis at three sites from December 7, 2001 through June, 2003. The summer temperatures (June through September, 2002) are summarized in Table 2.

**Table 2: Summer Temperatures for the Sugar River**

| Site             | Ave. Temperature | Min. Temperature | Max. Temperature |
|------------------|------------------|------------------|------------------|
| Paulson Road     | 17.1°C           | 8.5°C            | 22.9°C           |
| State Highway 69 | 18.5°C           | 9.3°C            | 24.5°C           |
| County Highway A | 19.4°C           | 12.3°C           | 26.2°C           |

The river shows increasing water temperature from upstream to downstream. The maximum temperature did exceed 25°C at CTH A and the daily mean temperature exceeded 22°C for several days at this same site (Figure 3). These temperatures are guidelines for helping determine cold water habitat characteristics. Minimum water temperatures reach 0°C, an indication that groundwater is not the dominant source of water to the river.

The Sugar River contains a diverse fishery. The impoundment at Belleville limits the potential to extend the cold water management zone further downstream by raising water temperatures and reducing significant habitat for cool and coldwater species.

## RECOMMENDATIONS AND CONCLUSIONS

Based on the 1992 survey, Marshall (1993) recommended the portion of the stream above Frenchtown Road to be classified as “cold water fish and aquatic life communities”. In 2000, the department’s South Central Region Headquarters recommended updating

NR104 and/or "Wisconsin Trout Streams", DNR Pub. 6-3600(80) to include the Sugar River in Dane County as a cold water stream and a trout water (WDNR, 2000).

The fish and habitat (temperature) information collected in 2002 support the definition of a Coldwater –A community as defined in the latest draft of the *Guidelines for Designated Fish and Aquatic Life Uses for Wisconsin Waters* by WDNR (2003). Coldwater-A-Class II ecosystems support a salmonid community with one or more age groups above the age of 1 year in sufficient numbers to indicate substantial survival from one year to the next. Since trout are not currently stocked in the Sugar River, they are likely migrating from other streams and reproducing in the river. The presence of other coldwater species, such as mottled sculpin, also support the classification. Coldwater-A waters typically maintain good water quality and contain fair to excellent habitat sufficient to support a community of salmonids or other coldwater indicator species. Summer maximum temperatures are less than 25°C and summer maximum daily mean water temperatures are less than 22°C. The habitat characteristics of the Upper Sugar River generally meet these guidelines. Therefore, **it is recommended that the Sugar River from its headwaters to Frenchtown Road be classified as a Coldwater A – Class II community.**

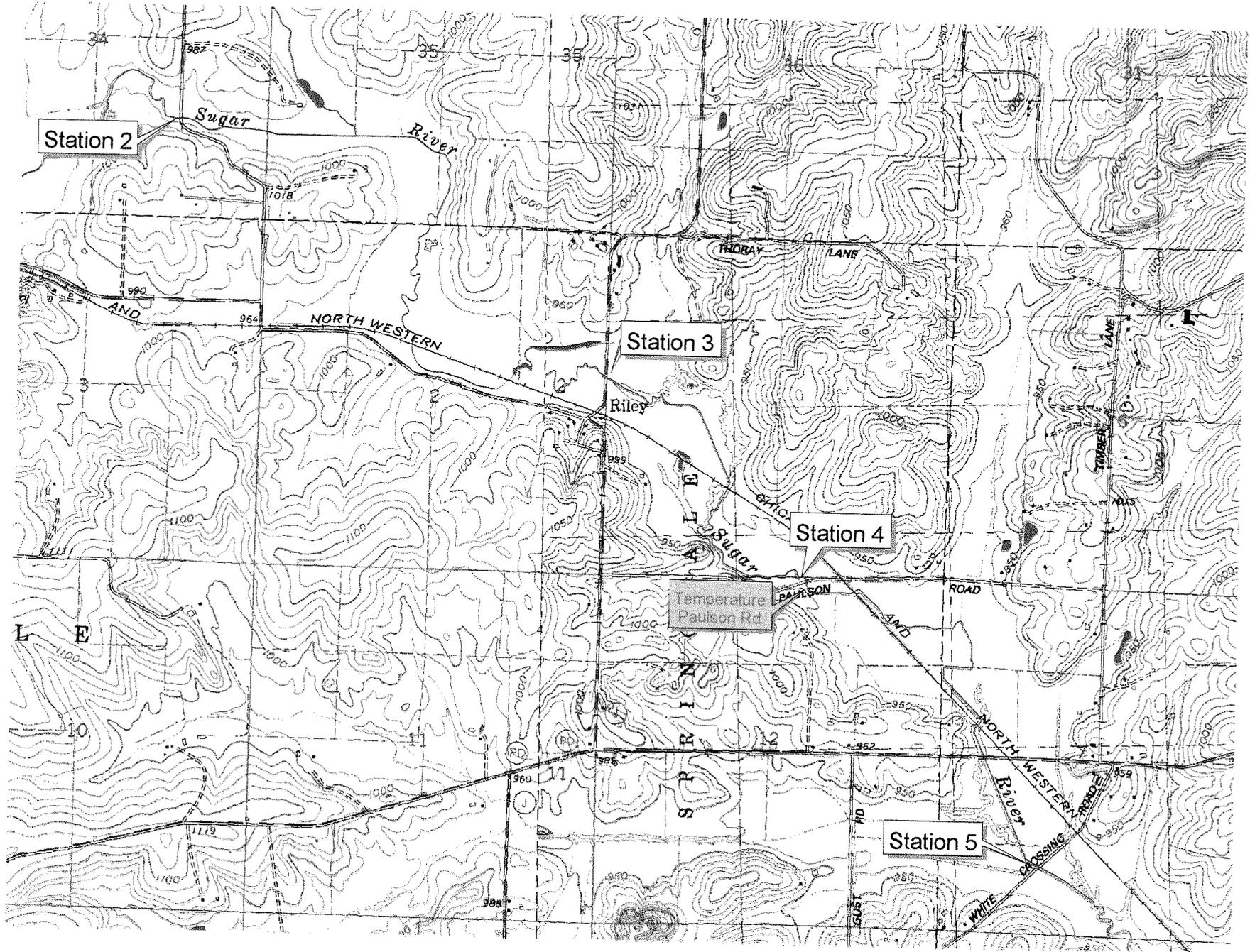
## References:

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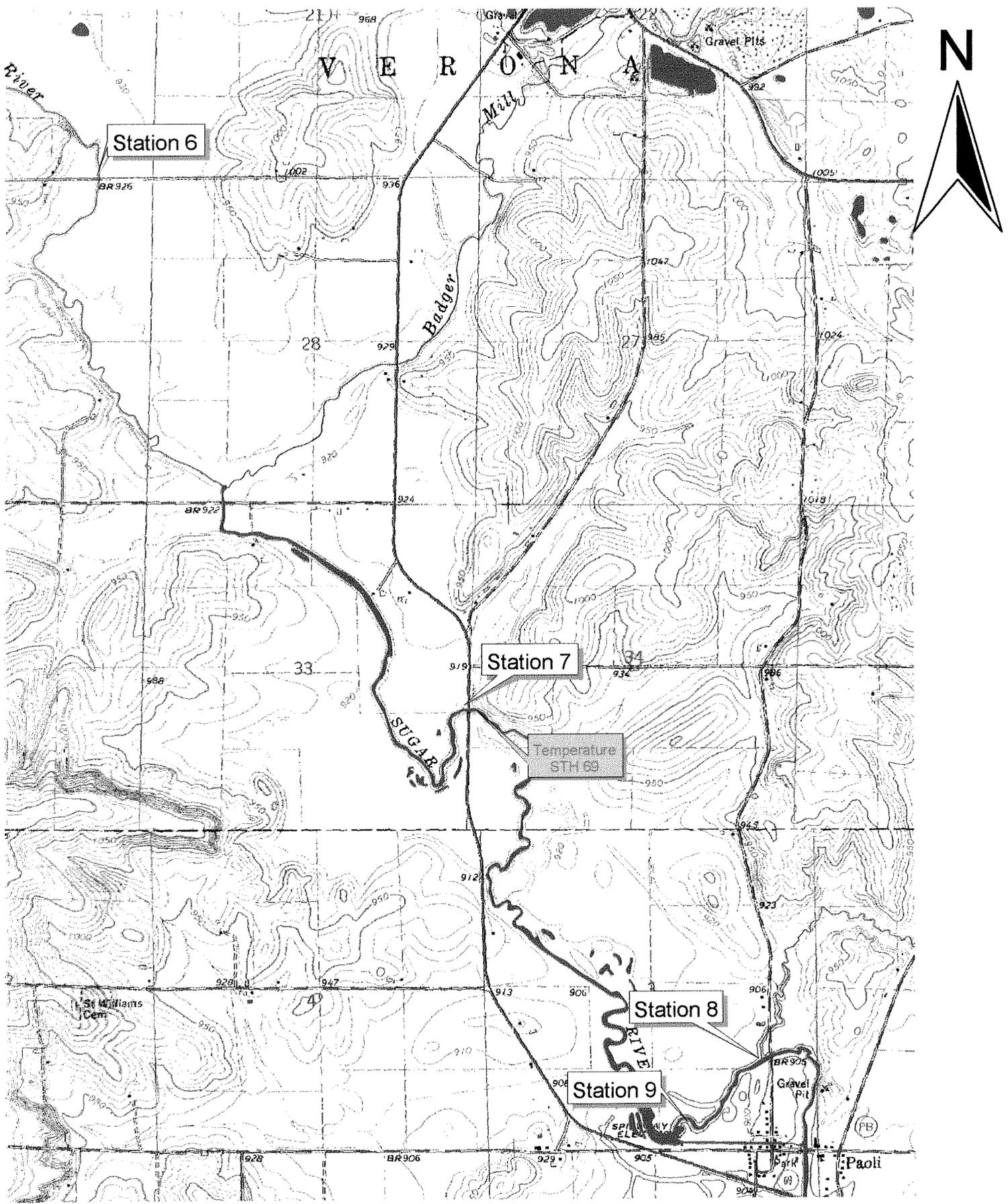
Table 1: Species Collected on the Upper Sugar River - September, 2002

| Species             | Tolerance        | Temp | Station 2                | Station 3 | Station 4 | Station 5 | Station 6 | Station 7 | Station 8 | Station 9 | Station 10 | Station 11 | Total |
|---------------------|------------------|------|--------------------------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|------------|------------|-------|
| Black Bullhead      | O                | NEU  |                          |           |           |           |           |           |           |           |            |            |       |
| Black Crappie       | O                | NEU  |                          |           |           | 2         | 3         |           | 1         |           |            |            | 1     |
| Blacksided Darter   | O                | NEU  |                          |           |           |           |           | 7         |           | 1         |            |            | 13    |
| Bluegill            | O                | NEU  |                          |           |           |           | 1         |           | 3         | 1         |            | 7          | 12    |
| Bluntnose Minnow    | T                | NEU  |                          |           |           | 2         |           | 5         |           | 5         |            | 2          | 14    |
| Brook Stickleback   | O                | NCL  |                          | 1         |           | 1         | 2         | 181       | 463       | 33        | 28         | 223        | 930   |
| Brown Trout         | I                | ECD  | 6                        | 17        | 13        | 33        | 51        | 85        | 91        | 178       | 103        | 48         | 2     |
| Central Mudminnow   | T                | NEU  | 1                        | 3         |           | 3         |           |           |           |           |            |            | 625   |
| Central Stoneroller | O                | NEU  |                          |           |           |           |           |           |           |           |            |            | 7     |
| Common Carp         | T                | EEU  |                          |           |           | 1         |           | 89        | 143       | 8         |            | 115        | 355   |
| Common Shiner       | O                | NEU  |                          |           |           |           |           | 10        | 11        | 32        | 2          | 10         | 66    |
| Creek Chub          | T                | NEU  | 1                        | 15        | 6         | 16        | 6         | 4         | 37        |           |            | 5          | 46    |
| Fantail Darter      | O                | NEU  |                          |           |           |           |           | 14        | 18        | 14        | 4          | 5          | 99    |
| Fathead Minnow      | T                | NEU  |                          |           |           |           |           | 4         |           | 98        | 21         | 33         | 156   |
| Golden Redhorse     | O                | NEU  |                          |           |           |           |           | 31        | 20        | 6         | 3          | 8          | 68    |
| Green Sunfish       | T                | NEU  | 1                        | 3         | 4         | 11        |           | 7         |           |           | 27         | 1          | 35    |
| Hornyhead Chub      | O                | NEU  |                          |           |           |           |           | 9         | 2         | 1         | 2          | 2          | 35    |
| Iowa Darter         | I                | NEU  |                          |           |           |           |           |           |           |           | 6          | 9          | 15    |
| Johnny Darter       | O                | NEU  |                          |           |           |           |           | 1         |           |           |            |            | 1     |
| Largemouth Bass     | O                | NEU  |                          | 1         |           |           |           | 234       | 59        | 106       | 22         | 180        | 602   |
| Logperch            | O                | NEU  |                          |           |           | 6         |           | 3         | 2         | 2         |            | 4          | 17    |
| Mottled Sculpin     | I                | NCL  | 230                      | 115       | 170       | 179       | 89        | 44        | 3         | 8         | 1          | 3          | 3     |
| Northern Hog Sucker | I                | NEU  |                          |           |           |           |           | 11        | 18        | 24        | 52         | 22         | 839   |
| Pumpkinseed         | O                | NEU  |                          |           |           |           |           |           |           |           |            |            | 127   |
| Sand Shiner         | O                | NEU  |                          |           |           | 1         |           |           |           |           |            |            | 1     |
| Shorthead Redhorse  | O                | NEU  |                          |           |           |           |           | 82        | 328       | 7         |            | 141        | 558   |
| Smallmouth Bass     | I                | NEU  |                          |           |           |           |           | 30        | 10        | 13        | 57         | 4          | 114   |
| Spotfin Shiner      | O                | NEU  |                          |           |           |           |           |           | 2         |           |            |            | 2     |
| Stonecat            | O                | NEU  |                          |           |           |           |           | 2         | 38        |           | 1          | 5          | 46    |
| White Sucker        | T                | NEU  | 36                       | 131       | 198       | 148       | 633       | 1851      | 403       | 502       | 300        | 400        | 1     |
| Yellow Bullhead     | T                | NEU  |                          |           |           |           |           |           |           |           |            |            | 4602  |
| <b>Total</b>        |                  |      | 275                      | 286       | 391       | 404       | 785       | 2703      | 1652      | 1040      | 629        | 1228       | 9393  |
|                     | <b>Tolerance</b> |      | <b>Temperature</b>       |           |           |           |           |           |           |           |            |            |       |
|                     | O = Other        |      | NEU = Native Eurythermal |           |           |           |           |           |           |           |            |            |       |
|                     | T = Tolerance    |      | NCL = Native Coolwater   |           |           |           |           |           |           |           |            |            |       |
|                     | I = Intolerant   |      | ECD = Exotic Cold Water  |           |           |           |           |           |           |           |            |            |       |
|                     |                  |      | EEU = Exotic Eurythermal |           |           |           |           |           |           |           |            |            |       |

# Figure 1a - 2002 Sugar River Survey Sites



# Figure 1b - Sugar River 2002 Survey Sites



# Figure 1c - Sugar River 2002 Survey Sites

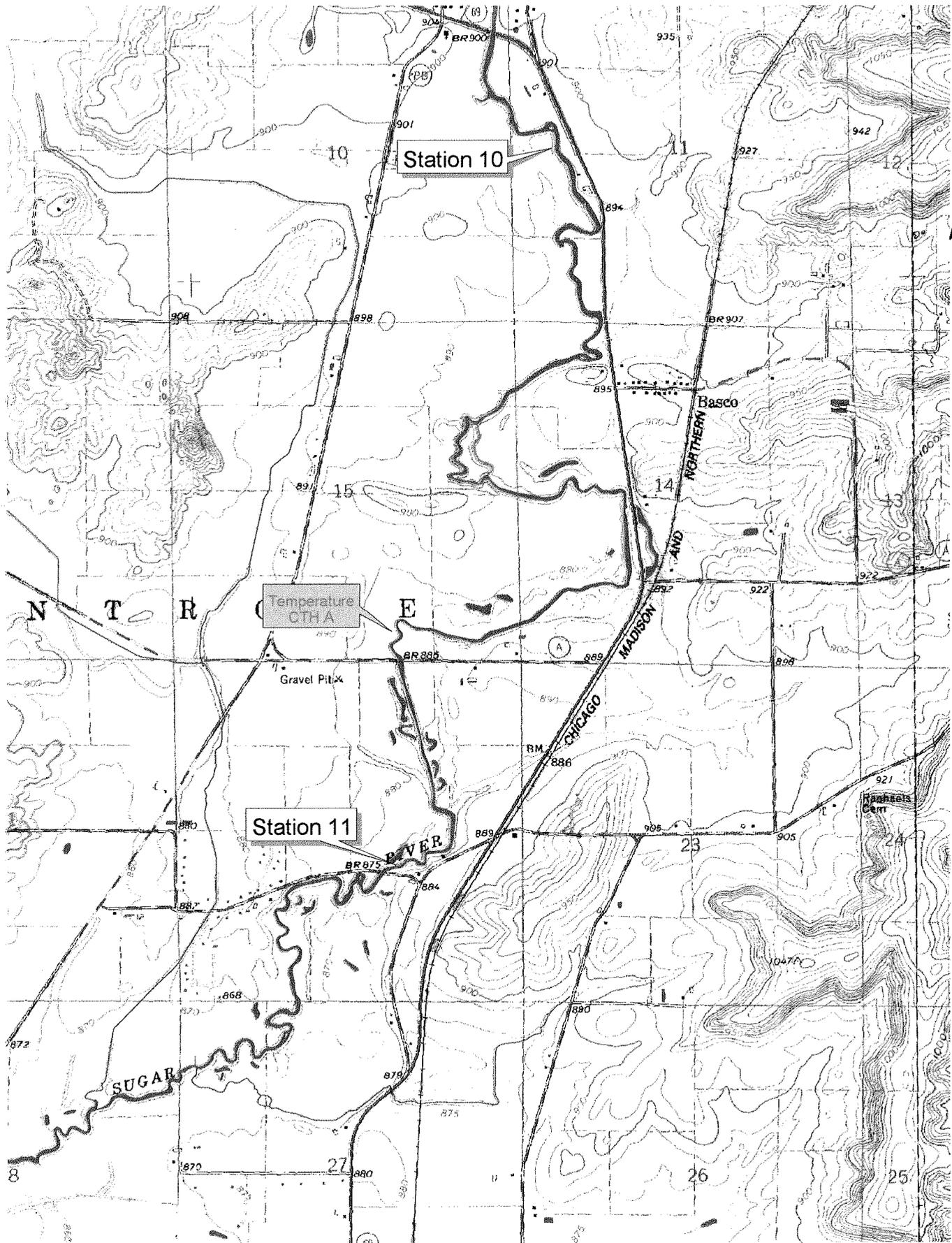
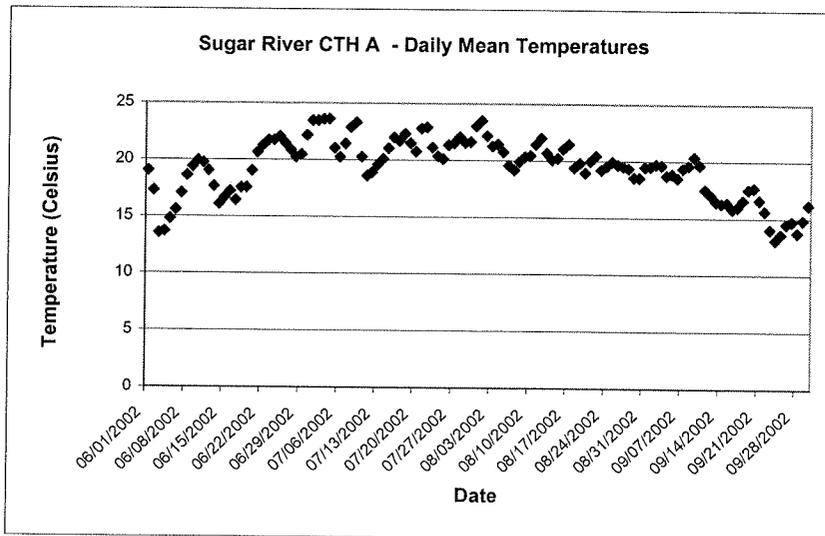
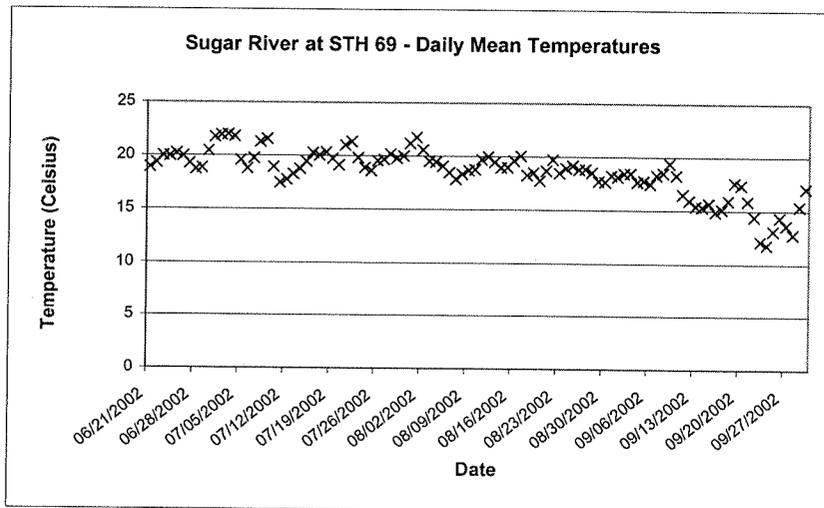
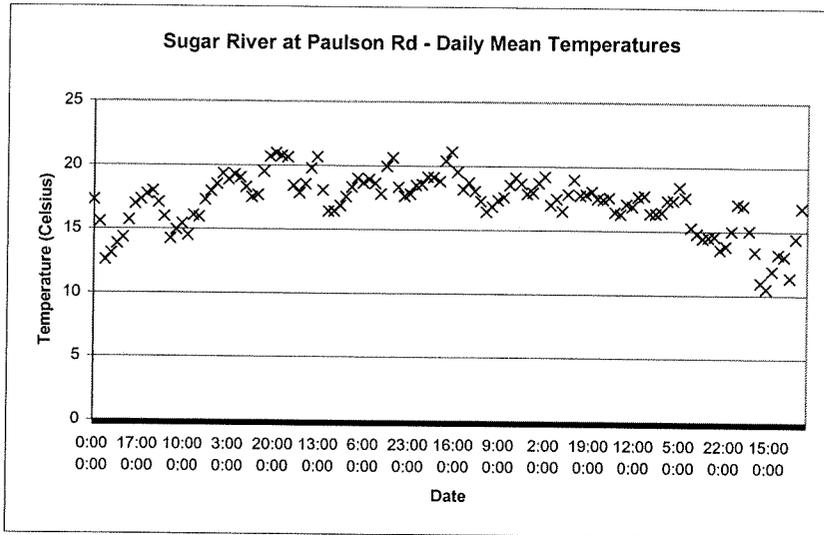




Figure 3 Daily Mean Summer Temperatures - Sugar River



# **Appendix 1**

Survey # 50299

Stream order 3 site mile 87.45  
Rev. 4-92

Run #: \_\_\_\_\_ Page #: \_\_\_\_\_  
 Water: Upper Sugar MWB Code: 875300 Date: 9/3/02 County: Dane Collector: MS, KW, JA  
 Target Fish: All Survey Type: CWIBI Mark Given: N/A H<sub>2</sub>O Temp: 60°F Time: 1315  
 Location: Valley View Ending Location: 244 m upstream of Valley View Station: 2  
 Township: 7N Range: 7E Sections: 34 1/16 Section: NW 1/4 Section: SE Latitude: 43° 2' 8.7" Longitude: 89° 38' 45.6"  
 Weather: Hot, 82°F, Sunny H<sub>2</sub>O Conduct: \_\_\_\_\_ H<sub>2</sub>O Level (low/normal/high) \_\_\_\_\_ H<sub>2</sub>O Clarity (clear/turbid/very turbid) \_\_\_\_\_  
 Volts: 110 Amps: 2.0 Current Type (AC/DC/Pulsed DC) \_\_\_\_\_ # Dippers: (1/2/3) Dipnet Mesh: 1/8 START = 43.03576  
 Pulse Rate: \_\_\_\_\_ Duty Cycle: \_\_\_\_\_ Type of Pass: (Up/Down) 89.64600  
 Gear Type: Mini Start Time: 1222 End Time: 1315 Distance Shocked: 244 m END 43.03705  
89.64732

| STATION | SPECIES | LENGTH | COUNT | WEIGHT | STATION | SPECIES             | LENGTH | COUNT | WEIGHT |
|---------|---------|--------|-------|--------|---------|---------------------|--------|-------|--------|
| 1       | BROWN   | 10.2   |       |        | 41      |                     |        |       |        |
| 2       |         | 10.6   |       |        | 42      |                     |        |       |        |
| 3       |         | 10.9   |       |        | 43      | BROWN               |        | 6     |        |
| 4       |         | 7.8    |       |        | 44      | W. SICKER           |        | 36    |        |
| 5       |         | 8.3    |       |        | 45      | SCULPIN             |        | 230   |        |
| 6       |         | 9.2    |       |        | 46      | C. CHUB             |        | 1     |        |
| 7       |         |        |       |        | 47      | G. SUNFISH          |        | 1     |        |
| 8       |         |        |       |        | 48      | MUDMINNOW           |        | 1     |        |
| 9       |         |        |       |        | 49      |                     |        | 275   |        |
| 10      |         |        |       |        | 50      |                     |        |       |        |
| 11      |         |        |       |        | 51      |                     |        |       |        |
| 12      |         |        |       |        | 52      |                     |        |       |        |
| 13      |         |        |       |        | 53      |                     |        |       |        |
| 14      |         |        |       |        | 54      |                     |        |       |        |
| 15      |         |        |       |        | 55      |                     |        |       |        |
| 16      |         |        |       |        | 56      |                     |        |       |        |
| 17      |         |        |       |        | 57      |                     |        |       |        |
| 18      |         |        |       |        | 58      |                     |        |       |        |
| 19      |         |        |       |        | 59      |                     |        |       |        |
| 20      |         |        |       |        | 60      |                     |        |       |        |
| 21      |         |        |       |        | 61      |                     |        |       |        |
| 22      |         |        |       |        | 62      | White Sucker        |        |       |        |
| 23      |         |        |       |        | 63      | <del>1</del>        |        |       |        |
| 24      |         |        |       |        | 64      |                     |        |       |        |
| 25      |         |        |       |        | 65      | Mottled Sculpin     |        |       |        |
| 26      |         |        |       |        | 66      | <del>1</del>        |        |       |        |
| 27      |         |        |       |        | 67      | 47, 19, 89,         |        |       |        |
| 28      |         |        |       |        | 68      |                     |        |       |        |
| 29      |         |        |       |        | 69      | Creek Chub 1        |        |       |        |
| 30      |         |        |       |        | 70      |                     |        |       |        |
| 31      |         |        |       |        | 71      |                     |        |       |        |
| 32      |         |        |       |        | 72      | Green Sunfish 1     |        |       |        |
| 33      |         |        |       |        | 73      |                     |        |       |        |
| 34      |         |        |       |        | 74      |                     |        |       |        |
| 35      |         |        |       |        | 75      | Central Mudminnow 1 |        |       |        |
| 36      |         |        |       |        | 76      |                     |        |       |        |
| 37      |         |        |       |        | 77      |                     |        |       |        |
| 38      |         |        |       |        | 78      |                     |        |       |        |
| 39      |         |        |       |        | 79      |                     |        |       |        |
| 40      |         |        |       |        | 80      |                     |        |       |        |

Site #: 125213  
Survey #: 50299

data entered and printed: Feb 2003

# COLDWATER IBI DATA COLLECTION

Valley View  
1244m

|             |       |               |                           |                                     |            |   |
|-------------|-------|---------------|---------------------------|-------------------------------------|------------|---|
|             |       |               | Date                      | 9/3/02                              | Station #  | 2 |
| Stream      | SUGAR |               | County                    | Grant - Iowa - Lafayette - Richland |            |   |
| Water Level |       | Water Clarity | clear - turbid - v turbid | Equipment                           |            |   |
| Flts        |       | Amps          |                           | Pulse Rate                          | Duty Cycle |   |
| Net Mesh    | 3/16  | # Dippers     | 1 - 2                     | Start Time                          | End Time   |   |

## #1 Number of intolerant Species (For example 3 Brook Trout Count As 1 Species, not 3)

|                   |                   |                  |               |
|-------------------|-------------------|------------------|---------------|
| N. Hog Sucker     | Brook Trout       | Smallmouth Bass  | # Species = / |
| Rock Bass         | Redside Dace      | Rainbow Darter   |               |
| Least Darter      | Mottled Sculpin ✓ | Iowa Darter      | ≥ 2 = 20      |
| Banded Darter     | Greater Redhorse  | Blacknose Shiner | 1 = 10        |
| Blackchin Shiner  | Rosyface Shiner   | Spottail Shiner  | 0 = 0         |
| Am. Brook Lamprey | N. Brook Lamprey  | Chestnut Lamprey |               |
| Sea Lamprey       | Silver Lamprey    |                  |               |

**SCORE**  
10

## #2 % of individuals that are tolerant species

|              |                  |                           |      |      |
|--------------|------------------|---------------------------|------|------|
| Carp         | Blacknose Dace   | # of tolerant individuals | 39 = | 14 % |
| Mudminnow /  | Yellow Bullhead  | Total # of fish           | 275  |      |
| Creek Chub / | G. Sunfish /     | 0 - 5 % = 20              |      |      |
| W. Sucker 36 | Fathead Minnow   | 6 - 22% = 10              |      |      |
| G. Shiner    | Bluntnose Minnow | 23 - 100% = 0             |      |      |

**SCORE**  
10

## #3 % of all individuals that are top carnivore

|           |                 |                    |     |     |
|-----------|-----------------|--------------------|-----|-----|
| Pike      | Brook Trout     | # of top carnivore | 6 = | 2 % |
| Musky     | Brown Trout 6   | total # of fish    | 275 |     |
| Burbot    | Rainbow Trout   | 46 - 100% = 20     |     |     |
| Walleye   | Smallmouth Bass | 15 - 45% = 10      |     |     |
| Rock Bass | Largemouth Bass | 0 - 14% = 0        |     |     |

**SCORE**  
0

## #4 % of all individuals that are stenothermal coolwater and coldwater species

|                        |                        |                 |      |
|------------------------|------------------------|-----------------|------|
| Northern Brook Lamprey | Burbot                 | # cold and cool |      |
| Southern Brook Lamprey | Musky                  | total # of fish |      |
| American Brook Lamprey | Longnose Sucker        | 236 =           | 86 % |
| Rainbow Trout          | Brook Stickleback      | 275             |      |
| Brook Trout            | Northern Redbelly Dace |                 |      |
| Brown Trout 6          | Finescale Dace         | 86 - 100% = 20  |      |
| Mottled Sculpin 230    | Redside Dace           | 43 - 85% = 10   |      |
| Brassy Minnow          | Pearl Dace             | 0 - 42% = 0     |      |

**SCORE**  
20

## #5 % of Salmonid individuals that are Brook Trout

|                  |     |     |                |
|------------------|-----|-----|----------------|
| # of Brook Trout | 0 = | 0 % | 96 - 100% = 20 |
| Total # of Trout | 6   |     | 5 - 95% = 10   |
|                  |     |     | 0 - 4% = 0     |

**SCORE**  
0

Integrity Rating

- 100 - 90 Excellent
- 80 - 60 Good
- 50 - 30 Fair
- 20 - 10 Poor
- 0 Very Poor

TOTAL SCORE

40  
INTEGRITY RATING

FAIR

Survey # 50300

STREAM ELECTROFISHING DATA COLLECTION SHEET

Form 3600-183

Stream Order 4 Site mile 84.8

Run #: \_\_\_\_\_ Page #: \_\_\_\_\_

Water: Upper Sugar MWB Code: 875300 Date: 9/3/02 County: Dade Collector: MS, KW, JA

Target Fish: ALL Survey Type: CWIBJ Mark Given: ADIPOSE H<sub>2</sub>O Temp: 64°F Time: 1430

Location: CTH J Bridge Ending Location: \_\_\_\_\_ Station: 3

Township: CON Range: 7E Sections: 2 1/16 Section: SE 1/4 Section: NE Latitude: 43°1'30.4" Longitude: 89°37'17.44"

Weather: Sunny, Hot, 84°F H<sub>2</sub>O Conduct: \_\_\_\_\_ H<sub>2</sub>O Level (low/normal/high) H<sub>2</sub>O Clarity (clear/turbid/very turbid)

Volts: 120 Amps: 2.5 Current Type (AC/DC/Pulsed DC) # Dippers: (1/2/3/1) Dipnet Mesh: 8 mesh START 43,02512  
Pulse Rate: N/A Duty Cycle: N/A Type of Pass: (Up/Down) END 89,62151

Gear Type: Mini Stream Start Time: 1350 End Time: \_\_\_\_\_ Distance Shocked: 300 meters END 43,02538  
89,62311

| STATION | SPECIES | LENGTH | COUNT | WEIGHT | STATION | SPECIES            | LENGTH                    | COUNT | WEIGHT |
|---------|---------|--------|-------|--------|---------|--------------------|---------------------------|-------|--------|
| 1       | Brown   | 17.1   |       |        | 41      | Mottled Sculpin    | 17, 20, 7, 1, 4, 3,       |       |        |
| 2       |         | 14.8   |       |        | 42      | 37, 10, 5, 4,      |                           |       |        |
| 3       |         | 9.3    |       |        | 43      |                    |                           |       |        |
| 4       |         | 9.5    |       |        | 44      |                    |                           |       |        |
| 5       |         | 9.0    |       |        | 45      | White Sucker =     | 15, 23, 3, 3, 2, 5, 9, 8, |       |        |
| 6       |         | 12.3   |       |        | 46      | 27, 15, 9, 9, 3,   |                           |       |        |
| 7       |         | 13.6   |       |        | 47      |                    |                           |       |        |
| 8       |         | 9.3    |       |        | 48      |                    |                           |       |        |
| 9       |         | 10.1   |       |        | 49      | Creek Chub =       | 2, 1, 2, 4, 1, 1, 3, 1,   |       |        |
| 10      |         | 10.0   |       |        | 50      |                    |                           |       |        |
| 11      |         | 10.1   |       |        | 51      |                    |                           |       |        |
| 12      |         | 8.9    |       |        | 52      | Green Sunfish      | 1, 1, 1,                  |       |        |
| 13      |         | 8.6    |       |        | 53      |                    |                           |       |        |
| 14      |         | 19.7   |       |        | 54      |                    |                           |       |        |
| 15      |         | 13.4   |       |        | 55      | Johnny Darters     | 1                         |       |        |
| 16      |         | 10.6   |       |        | 56      |                    |                           |       |        |
| 17      |         | 8.9    |       |        | 57      |                    |                           |       |        |
| 18      |         |        |       |        | 58      | Brook Sticklebacks | 1                         |       |        |
| 19      |         |        |       |        | 59      |                    |                           |       |        |
| 20      |         |        |       |        | 60      | Central Mudminnow  | 1, 2,                     |       |        |
| 21      |         |        |       |        | 61      |                    |                           |       |        |
| 22      |         |        |       |        | 62      |                    |                           |       |        |
| 23      |         |        |       |        | 63      |                    |                           |       |        |
| 24      |         |        |       |        | 64      |                    |                           |       |        |
| 25      |         |        |       |        | 65      |                    |                           |       |        |
| 26      |         |        |       |        | 66      |                    |                           |       |        |
| 27      |         |        |       |        | 67      | TOTALS             |                           |       |        |
| 28      |         |        |       |        | I21     | Brown Trout        |                           | 17    |        |
| 29      |         |        |       |        | U01     | Brook Sticklebacks |                           | 1     |        |
| 30      |         |        |       |        | M50     | Creek Chub         |                           | 15    |        |
| 31      |         |        |       |        | W05     | Green Sunfish      |                           | 3     |        |
| 32      |         |        |       |        | X12     | Johnny Darters     |                           | 1     |        |
| 33      |         |        |       |        | Z01     | Mottled Sculpin    |                           | 115   |        |
| 34      |         |        |       |        | K01     | White Sucker       |                           | 131   |        |
| 35      |         |        |       |        | N09     | Central mudminnow  |                           | 3     |        |
| 36      |         |        |       |        | 76      |                    |                           |       |        |
| 37      |         |        |       |        | 77      |                    |                           |       | 286    |
| 38      |         |        |       |        | 78      |                    |                           |       |        |
| 39      |         |        |       |        | 79      |                    |                           |       |        |
| 40      |         |        |       |        | 80      |                    |                           |       |        |

Site #: 125214  
Survey #: 50300

# COLDWATER IBI DATA COLLECTION

CTH J

|             |       |               |                           |                                     |           |            |
|-------------|-------|---------------|---------------------------|-------------------------------------|-----------|------------|
|             |       |               | Date                      |                                     | Station # | 3          |
| Stream      | SUGAR |               | County                    | Grant - Iowa - Lafayette - Richland |           |            |
| Water Level |       | Water Clarity | clear - turbid - v turbid | Equipment                           |           |            |
| Volts       |       | Amps          |                           | Pulse Rate                          |           | Duty Cycle |
| Net Mesh    | 3/16  | # Dippers     | 1 - 2                     | Start Time                          |           | End Time   |

## #1 Number of intolerant Species (For example 3 Brook Trout Count As 1 Species, not 3)

|                   |                   |                  |  |
|-------------------|-------------------|------------------|--|
| N. Hog Sucker     | Brook Trout       | Smallmouth Bass  | # Species<br>= 1<br>$\geq 2 = 20$<br>1 = 10<br>0 = 0 |
| Rock Bass         | Redside Dace      | Rainbow Darter   |  |
| Least Darter      | Mottled Sculpin ✓ | Iowa Darter      |  |
| Banded Darter     | Greater Redhorse  | Blacknose Shiner |  |
| Blackchin Shiner  | Rosyface Shiner   | Spottail Shiner  |  |
| Am. Brook Lamprey | N. Brook Lamprey  | Chestnut Lamprey |  |
| Sea Lamprey       | Silver Lamprey    |                  |  |

**SCORE**  
10

## #2 % of individuals that are tolerant species

|               |                  |                           |       |      |
|---------------|------------------|---------------------------|-------|------|
| Carp          | Blacknose Dace   | # of tolerant individuals | 152 = | 53 % |
| Mudminnow 3   | Yellow Bullhead  | Total # of fish           | 286   |      |
| Creek Chub 15 | G. Sunfish 3     | 0 - 5 % = 20              |       |      |
| W. Sucker 131 | Fathead Minnow   | 6 - 22% = 10              |       |      |
| G. Shiner     | Bluntnose Minnow | 23 - 100% = 0             |       |      |

**SCORE**  
0

## #3 % of all individuals that are top carnivore

|           |                 |                    |      |     |
|-----------|-----------------|--------------------|------|-----|
| Pike      | Brook Trout     | # of top carnivore | 17 = | 6 % |
| Musky     | Brown Trout 17  | total # of fish    | 286  |     |
| Burbot    | Rainbow Trout   | 46 - 100% = 20     |      |     |
| Walleye   | Smallmouth Bass | 15 - 45% = 10      |      |     |
| Rock Bass | Largemouth Bass | 0 - 14% = 0        |      |     |

**SCORE**  
0

## #4 % of all individuals that are stenothermal coolwater and coldwater species

|                        |                        |                 |      |
|------------------------|------------------------|-----------------|------|
| Northern Brook Lamprey | Burbot                 | # cold and cool |      |
| Southern Brook Lamprey | Musky                  | total # of fish |      |
| American Brook Lamprey | Longnose Sucker        | 133 =           | 47 % |
| Rainbow Trout          | Brook Stickleback 1    | 286             |      |
| Brook Trout            | Northern Redbelly Dace |                 |      |
| Brown Trout 17         | Finescale Dace         | 86 - 100% = 20  |      |
| Mottled Sculpin 115    | Redside Dace           | 43 - 85% = 10   |      |
| Brassy Minnow          | Pearl Dace             | 0 - 42% = 0     |      |

**SCORE**  
10

## #5 % of Salmonid individuals that are Brook Trout

|                  |     |     |                |
|------------------|-----|-----|----------------|
| # of Brook Trout | 0 = | 0 % | 96 - 100% = 20 |
| Total # of Trout | 17  |     | 5 - 95% = 10   |
|                  |     |     | 0 - 4% = 0     |

**SCORE**  
0

Integrity Rating

|                    |   |
|--------------------|---|
| 100 - 90 Excellent | TOTAL SCORE<br>20<br>INTEGRITY RATING<br>POOR |
| 80 - 60 Good       |   |
| 50 - 30 Fair       |   |
| 20 - 10 Poor       |   |
| 0 Very Poor        |   |

# COLDWATER IBI DATA COLLECTION

CTH J

|             |       |               |                           |                                     |            |   |
|-------------|-------|---------------|---------------------------|-------------------------------------|------------|---|
|             |       |               | Date                      |                                     | Station #  | 3 |
| Stream      | SUGAR |               | County                    | Grant - Iowa - Lafayette - Richland |            |   |
| Water Level |       | Water Clarity | clear - turbid - v turbid | Equipment                           |            |   |
| Plots       |       | Amps          |                           | Pulse Rate                          | Duty Cycle |   |
| Net Mesh    | 3/16  | # Dippers     | 1 - 2                     | Start Time                          | End Time   |   |

## #1 Number of intolerant Species (For example 3 Brook Trout Count As 1 Species, not 3)

|                   |                   |                  |                  |                    |          |
|-------------------|-------------------|------------------|------------------|--------------------|----------|
| N. Hog Sucker     | Brook Trout       | Smallmouth Bass  | # Species<br>= 1 | <b>SCORE</b><br>10 |          |
| Rock Bass         | Redside Dace      | Rainbow Darter   |                  |                    |          |
| Least Darter      | Mottled Sculpin ✓ | Iowa Darter      |                  |                    | ≥ 2 = 20 |
| Banded Darter     | Greater Redhorse  | Blacknose Shiner |                  |                    | 1 = 10   |
| Blackchin Shiner  | Rosyface Shiner   | Spottail Shiner  |                  |                    | 0 = 0    |
| Am. Brook Lamprey | N. Brook Lamprey  | Chestnut Lamprey |                  |                    |          |
| Sea Lamprey       | Silver Lamprey    |                  |                  |                    |          |

## #2 % of individuals that are tolerant species

|               |                  |                           |       |                   |
|---------------|------------------|---------------------------|-------|-------------------|
| Carp          | Blacknose Dace   | # of tolerant individuals | 152 = | 53 %              |
| Mudminnow 3   | Yellow Bullhead  | Total # of fish           | 286   |                   |
| Creek Chub 15 | G. Sunfish 3     | 0 - 5 % = 20              |       |                   |
| W. Sucker 131 | Fathead Minnow   | 6 - 22% = 10              |       | <b>SCORE</b><br>0 |
| G. Shiner     | Bluntnose Minnow | 23 - 100% = 0             |       |                   |

## #3 % of all individuals that are top carnivore

|           |                 |                    |      |                   |
|-----------|-----------------|--------------------|------|-------------------|
| Pike      | Brook Trout     | # of top carnivore | 17 = | 6 %               |
| Musky     | Brown Trout 17  | total # of fish    | 286  |                   |
| Burbot    | Rainbow Trout   | 46 - 100% = 20     |      |                   |
| Walleye   | Smallmouth Bass | 15 - 45% = 10      |      | <b>SCORE</b><br>0 |
| Rock Bass | Largemouth Bass | 0 - 14% = 0        |      |                   |

## #4 % of all individuals that are stenothermal coolwater and coldwater species

|                        |                        |                 |                    |
|------------------------|------------------------|-----------------|--------------------|
| Northern Brook Lamprey | Burbot                 | # cold and cool | 133 = 47 %         |
| Southern Brook Lamprey | Musky                  | total # of fish |                    |
| American Brook Lamprey | Longnose Sucker        | 286             |                    |
| Rainbow Trout          | Brook Stickleback 1    |                 |                    |
| Brook Trout            | Northern Redbelly Dace |                 |                    |
| Brown Trout 17         | Finescale Dace         | 86 - 100% = 20  |                    |
| Mottled Sculpin 115    | Redside Dace           | 43 - 85% = 10   | <b>SCORE</b><br>10 |
| Brassy Minnow          | Pearl Dace             | 0 - 42% = 0     |                    |

## #5 % of Salmonid individuals that are Brook Trout

|                  |     |     |                   |
|------------------|-----|-----|-------------------|
| # of Brook Trout | 0 = | 0 % | 96 - 100% = 20    |
| Total # of Trout | 17  |     | 5 - 95% = 10      |
|                  |     |     | 0 - 4% = 0        |
|                  |     |     | <b>SCORE</b><br>0 |

|                  |                    |                                 |
|------------------|--------------------|---------------------------------|
| Integrity Rating | 100 - 90 Excellent | <b>TOTAL SCORE</b><br>20        |
|                  | 80 - 60 Good       |                                 |
|                  | 50 - 30 Fair       |                                 |
|                  | 20 - 10 Poor       |                                 |
|                  | 0 Very Poor        | <b>INTEGRITY RATING</b><br>poor |

Survey # 50300

STREAM ELECTROFISHING DATA COLLECTION SHEET

Form 3600-183

Stream Order 4 Site mile 84.8

Run #: \_\_\_\_\_ Page #: \_\_\_\_\_

Water: Upper Sugar MWB Code: 875300 Date: 9/3/02 County: Dade Collector: MS, KW, JA

Target Fish: ALL Survey Type: CWIBT Mark Given: ADIPOSE H<sub>2</sub>O Temp: 64°F Time: 1430

Starting Location: CTH J Bridge Ending Location: \_\_\_\_\_ Station: 3

Township: 10N Range: 7E Sections: 2 1/16 Section: SE 1/4 Section: NE Latitude: 43°1'30.4" Longitude: 89°37'17.44"

Weather: Sunny, HOT, 84°F H<sub>2</sub>O Conduct: \_\_\_\_\_ H<sub>2</sub>O Level (low/normal/high) \_\_\_\_\_ H<sub>2</sub>O Clarity (clear/turbid/very turbid) \_\_\_\_\_

Volts: 120 Amps: 2.5 Current Type (AC/DC/Pulsed DC) \_\_\_\_\_ # Dippers: (1/2/3/) \_\_\_\_\_ Dipnet Mesh: 6 mesh

Pulse Rate: N/A Duty Cycle: N/A Type of Pass: (Up/Down) \_\_\_\_\_

START 43, 02512  
89, 62151

Gear Type: Mini Stream Start Time: 1350 End Time: \_\_\_\_\_ Distance Shocked: 300 meters

END 43, 02538  
89, 62311

| STATION | SPECIES | LENGTH | COUNT | WEIGHT |
|---------|---------|--------|-------|--------|
| 1       | Brown   | 17.1   |       |        |
| 2       |         | 14.8   |       |        |
| 3       |         | 9.3    |       |        |
| 4       |         | 9.5    |       |        |
| 5       |         | 9.0    |       |        |
| 6       |         | 12.3   |       |        |
| 7       |         | 13.6   |       |        |
| 8       |         | 9.3    |       |        |
| 9       |         | 10.1   |       |        |
| 10      |         | 10.0   |       |        |
| 11      |         | 10.1   |       |        |
| 12      |         | 8.9    |       |        |
| 13      |         | 8.6    |       |        |
| 14      |         | 19.7   |       |        |
| 15      |         | 13.4   |       |        |
| 16      |         | 10.6   |       |        |
| 17      |         | 8.9    |       |        |
| 18      |         |        |       |        |
| 19      |         |        |       |        |
| 20      |         |        |       |        |
| 21      |         |        |       |        |
| 22      |         |        |       |        |
| 23      |         |        |       |        |
| 24      |         |        |       |        |
| 25      |         |        |       |        |
| 26      |         |        |       |        |
| 27      |         |        |       |        |
| 28      |         |        |       |        |
| 29      |         |        |       |        |
| 30      |         |        |       |        |
| 31      |         |        |       |        |
| 32      |         |        |       |        |
| 33      |         |        |       |        |
| 34      |         |        |       |        |
| 35      |         |        |       |        |
| 36      |         |        |       |        |
| 37      |         |        |       |        |
| 38      |         |        |       |        |
| 39      |         |        |       |        |
| 40      |         |        |       |        |

| STATION | SPECIES            | LENGTH                    | COUNT | WEIGHT     |
|---------|--------------------|---------------------------|-------|------------|
| 41      | Mottled Sculpin    | 17, 20, 7, 1, 4, 3        |       |            |
| 42      |                    | 37, 10, 5, 4, 1           |       |            |
| 43      |                    |                           |       |            |
| 44      |                    |                           |       |            |
| 45      | White Sucker       | 15, 23, 3, 3, 2, 5, 9, 8, |       |            |
| 46      |                    | 27, 15, 9, 9, 3,          |       |            |
| 47      |                    |                           |       |            |
| 48      |                    |                           |       |            |
| 49      | Creek Chub         | 2, 1, 2, 4, 1, 1, 3, 1,   |       |            |
| 50      |                    |                           |       |            |
| 51      |                    |                           |       |            |
| 52      | Green Sunfish      | 1, 1, 1,                  |       |            |
| 53      |                    |                           |       |            |
| 54      |                    |                           |       |            |
| 55      | Johnny Darters     | 1                         |       |            |
| 56      |                    |                           |       |            |
| 57      |                    |                           |       |            |
| 58      | Brook Sticklebacks | 5                         |       |            |
| 59      |                    |                           |       |            |
| 60      | Central Mudminnow  | 1, 2,                     |       |            |
| 61      |                    |                           |       |            |
| 62      |                    |                           |       |            |
| 63      |                    |                           |       |            |
| 64      |                    |                           |       |            |
| 65      |                    |                           |       |            |
| 66      |                    |                           |       |            |
| 67      | TOTALS             |                           |       |            |
| 68      | Brown Trout        |                           |       | 17         |
| 69      | BROOK STICKLEBACKS |                           |       | 1          |
| 70      | CREEK CHUB         |                           |       | 15         |
| 71      | GREEN SUNFISH      |                           |       | 3          |
| 72      | JOHNNY DARTERS     |                           |       | 1          |
| 73      | MOTTLED SCULPIN    |                           |       | 115        |
| 74      | WHITE SUCKER       |                           |       | 131        |
| 75      | CENTRAL MUDMINNOW  |                           |       | 3          |
| 76      |                    |                           |       | <u>286</u> |
| 77      |                    |                           |       |            |
| 78      |                    |                           |       |            |
| 79      |                    |                           |       |            |
| 80      |                    |                           |       |            |

site #: 125214  
survey #: 50300

data entered and proofed Feb 2003

Run #: 181 Page #: 181

Water: SUGAR MWB Code: 875300 Date: 9/5/02 County: DANE Collector: JH, KW, RS

Target Fish: ALL Survey Type: 1B1 Mark Given: ADIPOSE H<sub>2</sub>O Temp: 62° Time: 13:25

Starting Location: PAULSON Rd. Ending Location: 228m upstream Paulson Station: #4 89.6100

Township: LOW Range: 7E Sections: 1 1/16 Section: SW 1/4 Section: SE Latitude: 43° 1' 1.03" Longitude: 89° 36' 36.0"

Weather: \_\_\_\_\_ H<sub>2</sub>O Conduct: \_\_\_\_\_ H<sub>2</sub>O Level (low/normal/high) 43.5170 H<sub>2</sub>O Clarity (clear/turbid/very turbid) START

Volts: 175 Amps: 3.5 Current Type (AC/DC/Pulsed DC) DC # Dippers: (12/30) Dipnet Mesh: 1/8"

43.6101.03  
89.3636.00

Pulse Rate: \_\_\_\_\_ Duty Cycle: \_\_\_\_\_ Type of Pass: (Up/Down)

Gear Type: Sm. Streamboat Start Time: 13:25 End Time: 14:05 Distance Shocked: 228m

| STATION | SPECIES | LENGTH | COUNT | WEIGHT | STATION | SPECIES    | LENGTH                      | COUNT      | WEIGHT |
|---------|---------|--------|-------|--------|---------|------------|-----------------------------|------------|--------|
| 1       | BROWN   | 7.3    |       |        | 41      | SUCKER     | UNT III                     |            |        |
| 2       |         | 8.1    |       |        | 42      |            | UNT UNT UNT UNT UNT UNT     |            |        |
| 3       |         | 12.0   |       |        | 43      |            | UNT UNT UNT UNT UNT UNT     |            |        |
| 4       |         | 12.7   |       |        | 44      |            | UNT UNT UNT UNT UNT UNT     |            |        |
| 5       |         | 15.0   |       |        | 45      |            | UNT UNT UNT UNT UNT UNT     |            |        |
| 6       |         | 19.3   |       |        | 46      |            | UNT UNT UNT UNT UNT UNT     |            |        |
| 7       |         | 10.1   |       |        | 47      |            | UNT UNT UNT UNT UNT UNT     |            |        |
| 8       |         | 18.3   |       |        | 48      |            | UNT I                       |            |        |
| 9       |         | 10.9   |       |        | 49      |            |                             |            |        |
| 10      |         | 13.1   |       |        | 50      |            |                             |            |        |
| 11      |         | 3.3    |       |        | 51      | SCULPIN    | UNT UNT UNT UNT UNT UNT UNT |            |        |
| 12      |         | 4.2    |       |        | 52      |            | UNT UNT UNT UNT UNT UNT UNT |            |        |
| 13      |         | 4.4    |       |        | 53      |            | UNT UNT UNT UNT UNT UNT UNT |            |        |
| 14      |         |        |       |        | 54      |            | UNT UNT UNT UNT UNT UNT UNT |            |        |
| 15      |         |        |       |        | 55      |            | UNT UNT                     |            |        |
| 16      |         |        |       |        | 56      |            |                             |            |        |
| 17      |         |        |       |        | 57      |            |                             |            |        |
| 18      |         |        |       |        | 58      |            |                             |            |        |
| 19      |         |        |       |        | 59      |            |                             |            |        |
| 20      |         |        |       |        | 60      | C. CHUB    | UNT I                       |            |        |
| 21      |         |        |       |        | 61      |            |                             |            |        |
| 22      |         |        |       |        | 62      |            |                             |            |        |
| 23      |         |        |       |        | 63      |            |                             |            |        |
| 24      |         |        |       |        | 64      |            |                             |            |        |
| 25      |         |        |       |        | 65      | G. SUNFISH | IIII                        |            |        |
| 26      |         |        |       |        | 66      |            |                             |            |        |
| 27      |         |        |       |        | 67      |            |                             |            |        |
| 28      |         |        |       |        | 68      | BROWN      |                             | 13         |        |
| 29      |         |        |       |        | 69      | SUCKER     |                             | 198        |        |
| 30      |         |        |       |        | 70      | SCULPIN    |                             | 170        |        |
| 31      |         |        |       |        | 71      | C. CHUB    |                             | 6          |        |
| 32      |         |        |       |        | 72      | G. SUNFISH |                             | 4          |        |
| 33      |         |        |       |        | 73      |            |                             | <u>391</u> |        |
| 34      |         |        |       |        | 74      | TOTAL      |                             |            |        |
| 35      |         |        |       |        | 75      |            |                             |            |        |
| 36      |         |        |       |        | 76      |            |                             |            |        |
| 37      |         |        |       |        | 77      |            |                             |            |        |
| 38      |         |        |       |        | 78      |            |                             |            |        |
| 39      |         |        |       |        | 79      |            |                             |            |        |
| 40      |         |        |       |        | 80      |            |                             |            |        |

site #: 125215

Survey #: 50301

\* data entered and printed Feb 2001

## Jugan River - Above Panloon Rd.

Stream approx 3-4 m wide with average depth of  $\sim$  2 feet. Bottom type consisted of clay + silt. Not many riffle areas, most habitat resulting from downed trees in the water. The stream is very shaded, with surprisingly nice, deep holes ( $\rightarrow$  wait). Banks are fairly well eroded and high  $\sim$  3 feet.

Lots of walnut trees + fingernail clams!

Not many 409<sup>trout</sup>, suckers fairly large, not many 409 suckers though.

The stream appears to get quite a sediment load during storm events, although the clay bottom seems to keep its shape. Stream could really use some sunlight, might vegetate the banks and add some productivity to the stream.

# COLDWATER IBI DATA COLLECTION

|             |       |               |                           |            |                                     |            |   |
|-------------|-------|---------------|---------------------------|------------|-------------------------------------|------------|---|
|             |       |               |                           | Date       | 9/5/02                              | Station #  | 4 |
| Stream      | SUGAR |               |                           | County     | Grant - Iowa - Lafayette - Richland |            |   |
| Water Level |       | Water Clarity | clear - turbid - v turbid | Equipment  |                                     |            |   |
| Volts       |       | Amps          |                           | Pulse Rate |                                     | Duty Cycle |   |
| Net Mesh    | 3/16  | # Dippers     | 1 - 2                     | Start Time |                                     | End Time   |   |

PAULSON  
228 m

## #1 Number of intolerant Species (For example 3 Brook Trout Count As 1 Species, not 3)

|                   |                   |                  |   |                    |
|-------------------|-------------------|------------------|---|--------------------|
| N. Hog Sucker     | Brook Trout       | Smallmouth Bass  | # Species<br>= 1<br>≥ 2 = 20<br>1 = 10<br>0 = 0 | <b>SCORE</b><br>10 |
| Rock Bass         | Redside Dace      | Rainbow Darter   |   |                    |
| Least Darter      | Mottled Sculpin ✓ | Iowa Darter      |   |                    |
| Banded Darter     | Greater Redhorse  | Blacknose Shiner |   |                    |
| Blackchin Shiner  | Rosyface Shiner   | Spottail Shiner  |   |                    |
| Am. Brook Lamprey | N. Brook Lamprey  | Chestnut Lamprey |   |                    |
| Sea Lamprey       | Silver Lamprey    |                  |   |                    |

## #2 % of individuals that are tolerant species

|               |                  |                           |       |                   |
|---------------|------------------|---------------------------|-------|-------------------|
| Carp          | Blacknose Dace   | # of tolerant individuals | 208 = | 0 %               |
| Mudminnow     | Yellow Bullhead  | Total # of fish           | 391   |                   |
| Creek Chub 6  | G. Sunfish 4     | 0 - 5 % = 20              |       | <b>SCORE</b><br>0 |
| W. Sucker 198 | Fathead Minnow   | 6 - 22% = 10              |       |                   |
| G. Shiner     | Bluntnose Minnow | 23 - 100% = 0             |       |                   |

## #3 % of all individuals that are top carnivore

|           |                 |                    |      |                   |
|-----------|-----------------|--------------------|------|-------------------|
| Pike      | Brook Trout     | # of top carnivore | 13 = | 3 %               |
| Musky     | Brown Trout 13  | total # of fish    | 391  |                   |
| Burbot    | Rainbow Trout   | 46 - 100% = 20     |      | <b>SCORE</b><br>0 |
| Walleye   | Smallmouth Bass | 15 - 45% = 10      |      |                   |
| Rock Bass | Largemouth Bass | 0 - 14% = 0        |      |                   |

## #4 % of all individuals that are stenothermal coolwater and coldwater species

|                        |                        |                 |      |                    |
|------------------------|------------------------|-----------------|------|--------------------|
| Northern Brook Lamprey | Burbot                 | # cold and cool | 47 % | <b>SCORE</b><br>10 |
| Southern Brook Lamprey | Musky                  | total # of fish |      |                    |
| American Brook Lamprey | Longnose Sucker        | 183 =           |      |                    |
| Rainbow Trout          | Brook Stickleback      | 391             |      |                    |
| Brook Trout            | Northern Redbelly Dace |                 |      |                    |
| Brown Trout 13         | Finescale Dace         | 86 - 100% = 20  |      |                    |
| Mottled Sculpin 170    | Redside Dace           | 43 - 85% = 10   |      |                    |
| Brassy Minnow          | Pearl Dace             | 0 - 42% = 0     |      |                    |

## #5 % of Salmonid individuals that are Brook Trout

|                  |     |     |                |                   |
|------------------|-----|-----|----------------|-------------------|
| # of Brook Trout | 0 = | 0 % | 96 - 100% = 20 | <b>SCORE</b><br>0 |
| Total # of Trout | 13  |     | 5 - 95% = 10   |                   |
|                  |     |     | 0 - 4% = 0     |                   |

|                  |                    |   |
|------------------|--------------------|---|
| Integrity Rating | 100 - 90 Excellent | <b>TOTAL SCORE</b><br>20<br><b>INTEGRITY RATING</b><br>Poor |
|                  | 80 - 60 Good       |   |
|                  | 50 - 30 Fair       |   |
|                  | 20 - 10 Poor       |   |
|                  | 0 Very Poor        |   |

Run #: 1 of 1 Page #: 1 of 1

Form 3600-183

Site mile: 74.1  
Stream order 4  
Quad: Verona

Water: SUGAR R. MWB Code: 875300 Date: 9/5/02 County: DANE Collector: JH, JS, LC, MS, JA

Target Fish: ALL Survey Type: 1B1 Mark Given: ADIPOSE H<sub>2</sub>O Temp: 62° Time: 9:00

Starting Location: HWY 69 Bridge Ending Location: between willow + oaks @ (cattle xing) corner post Station: #7

Township: COM Range: SE Sections: 33 1/16 Section: SE 1/4 Section: SE Latitude: 42°56'57.6" Longitude: 89°32'39.1"

Weather: SUNNY ~ 75° H<sub>2</sub>O Conduct: H<sub>2</sub>O Level (low/normal/high) 42.9493 H<sub>2</sub>O Clarity (clear/turbid/very turbid) 29.5442

Volts: 250 Amps: 3.5 Current Type (AC/DC/Pulsed DC) # Dippers: (12/31) Dipnet Mesh: 1/8" Pulse Rate: Duty Cycle: Type of Pass: (Up/Down) END GPS 42°56'49.0"

Gear Type: Lg. Stream boat Start Time: 9:05 End Time: 11:45 Distance Shocked: 674 m END TEMP → 66

| STATION | SPECIES     | LENGTH            | COUNT    | WEIGHT            |
|---------|-------------|-------------------|----------|-------------------|
| 1       | Hog         | 3+3+5             |          |                   |
| 2       | SUCKER      | 4                 |          |                   |
| 3       | N. SUCKER   | 8+57+7            | +5+2+2   | +1+5+17 +4+2+3    |
| 4       | W. Sucker   | 94+127+97         | +2+41+7  | +34+23+0 +3+1+2   |
| 5       | 320+3+1     | +119+3+3+40       | +9+18+3  | +1+1+48+5+2+2+215 |
| 6       | +3+2+6+     | 3+2+2+2           | +227+75  | +120+1+40 +4+8    |
| 7       | G. Redhorse | 2+2+2+1           |          |                   |
| 8       |             |                   |          |                   |
| 9       | Short Red   | 11+6+3+7          | +3       |                   |
| 10      |             |                   |          |                   |
| 11      | B. Crap.    | 6.0               | 6.6      |                   |
| 12      |             | 6.0               | 6.0      |                   |
| 13      |             | 5.9               |          |                   |
| 14      |             | 5.5               |          |                   |
| 15      |             | 5.4               |          |                   |
| 16      |             |                   |          |                   |
| 17      | Large Mouth | 6.5               |          |                   |
| 18      | Bass        | 5.8               |          |                   |
| 19      |             | 6.1               |          |                   |
| 20      |             |                   |          |                   |
| 21      | Johnny P.   | 2+16+4+5+2+4+17+2 | +3+3+1+1 | +14+3+4           |
| 22      | 22+15+2     | 18+7+3+6+27+11+20 | +3+9+1   | +3+3+2            |
| 23      |             |                   |          |                   |
| 24      | Bluegill    | 3.2               | 3.4      |                   |
| 25      |             | 3.7               |          |                   |
| 26      |             | 3.2               |          |                   |
| 27      |             | 4.2               |          |                   |
| 28      | Creek CH.   | 1+2+1+2           | 11       |                   |
| 29      |             | 1+2+2+1           |          |                   |
| 30      |             |                   |          |                   |
| 31      | Blunt N.    | 12+12+3           | +1+1+7+8 | +17+22+6 +2+7+2   |
| 32      |             |                   | +43      | +5                |
| 33      |             |                   |          |                   |
| 34      | Sculpin     | 3+7+1+2           | +3+8+2+1 | +2+1+2 +3+2+1     |
| 35      |             | 2+1+2             |          |                   |
| 36      |             |                   |          |                   |
| 37      | Green Sun   | 5+1+1+1           | +1       |                   |
| 38      |             |                   |          |                   |
| 39      | Flat Head M | 1+1+2+1+3         | +3+3+1   | +1+2+3+4 +2+3+1   |
| 40      | Carp        | 5+1+3+1           |          |                   |

| STATION | SPECIES      | LENGTH  | COUNT      | WEIGHT |
|---------|--------------|---------|------------|--------|
| 41      | Brown        | 14.3    | 3.7        | 4.0    |
| 42      |              | 14.5    | 4.3        | 4.0    |
| 43      |              | 12.6    | 7.2        | 4.6    |
| 44      |              | 9.8     | 9.0        | 13.7   |
| 45      |              | 12.2    | 8.2        | 11.8   |
| 46      |              | 14.2    | 4.3        | 15.1   |
| 47      |              | 15.0    | 3.9        | 12.1   |
| 48      |              | 10.3    | 4.0        | 9.7    |
| 49      |              | 12.7    | 12.4       | 14.1   |
| 50      |              | 15.2    | 8.6        | 11.3   |
| 51      |              | 11.7    | 4.0        | 11.3   |
| 52      |              | 8.3     | 8.6        | 12.2   |
| 53      |              | 12.6    | 6.9        | 11.0   |
| 54      |              | 12.5    | 11.2       | 10.8   |
| 55      |              | 7.4     | 8.1        | 11.3   |
| 56      |              | 10.1    | 7.7        | 8.5    |
| 57      |              | 10.5    | 4.1        | 12.4   |
| 58      |              | 8.6     | 3.5        | 12.5   |
| 59      | 3.4          | 11.8    | 13.2       | 14.2   |
| 60      |              | 16.5    | 11.6       | 12.9   |
| 61      |              | 3.9     | 5.1        | 3.2    |
| 62      | Fan Tail     | 1+1+1+1 |            | 3.6    |
| 63      |              |         |            |        |
| 64      | Spot Fin S.  | 11      |            |        |
| 65      |              |         |            |        |
| 66      | Common S.    |         |            |        |
| 67      | STONE ROCK   | +5      |            |        |
| 68      | STONE ROCK   |         |            |        |
| 69      |              |         |            |        |
| 70      | SAND SH.     |         |            |        |
| 71      | +36+2        |         |            |        |
| 72      |              |         |            |        |
| 73      | BROWN        | 81      | BLUEGILL   | 5      |
| 74      | N. HOGSUCKER | 11      | C. CHUB    | 14     |
| 75      | W. SUCKER    | 1851    | BLUNTNOSE  | 181    |
| 76      | G. Redhorse  | 7       | SCULPIN    | 44     |
| 77      | Sh. Redhorse | 30      | G. SUNFISH | 9      |
| 78      | B. CRAPPIE   | 7       | FATHEAD    | 31     |
| 79      | LMB          | 3       | CARP       | 10     |
| 80      | J. DARTER    | 234     | FANTAIL    | 4      |

# COLDWATER IBI DATA COLLECTION

NW 69  
644m

|             |       |               |                                     |            |   |
|-------------|-------|---------------|-------------------------------------|------------|---|
|             |       | Date          | 9/5/02                              | Station #  | 7 |
| Stream      | SUGAR | County        | Grant - Iowa - Lafayette - Richland |            |   |
| Water Level |       | Water Clarity | clear - turbid - v turbid           | Equipment  |   |
| Volts       |       | Amps          |                                     | Pulse Rate |   |
| Net Mesh    | 3/16  | # Dippers     | 1 - 2                               | Start Time |   |
|             |       |               |                                     | End Time   |   |

## #1 Number of intolerant Species (For example 3 Brook Trout Count As 1 Species, not 3)

|                   |                   |                  |               |                    |
|-------------------|-------------------|------------------|---------------|--------------------|
| N. Hog Sucker ✓   | Brook Trout       | Smallmouth Bass  | # Species = 2 | <b>SCORE</b><br>20 |
| Rock Bass         | Redside Dace      | Rainbow Darter   |               |                    |
| Least Darter      | Mottled Sculpin ✓ | Iowa Darter      | ≥ 2 = 20      |                    |
| Banded Darter     | Greater Redhorse  | Blacknose Shiner | 1 = 10        |                    |
| Blackchin Shiner  | Rosyface Shiner   | Spottail Shiner  | 0 = 0         |                    |
| Am. Brook Lamprey | N. Brook Lamprey  | Chestnut Lamprey |               |                    |
| Sea Lamprey       | Silver Lamprey    |                  |               |                    |

## #2 % of individuals that are tolerant species

|                |                      |                           |        |                   |
|----------------|----------------------|---------------------------|--------|-------------------|
| Carp 10        | Blacknose Dace       | # of tolerant individuals | 2096 = | 78 %              |
| Mudminnow      | Yellow Bullhead      | Total # of fish           | 2703   |                   |
| Creek Chub 14  | G. Sunfish 9         | 0 - 5 % = 20              |        | <b>SCORE</b><br>0 |
| W. Sucker 1851 | Fathead Minnow 31    | 6 - 22% = 10              |        |                   |
| G. Shiner      | Bluntnose Minnow 181 | 23 - 100% = 0             |        |                   |

## #3 % of all individuals that are top carnivore

|           |                   |                    |      |                   |
|-----------|-------------------|--------------------|------|-------------------|
| Pike      | Brook Trout       | # of top carnivore | 88 = | 3 %               |
| Musky     | Brown Trout 85    | total # of fish    | 2703 |                   |
| Burbot    | Rainbow Trout     | 46 - 100% = 20     |      | <b>SCORE</b><br>0 |
| Walleye   | Smallmouth Bass   | 15 - 45% = 10      |      |                   |
| Rock Bass | Largemouth Bass 3 | 0 - 14% = 0        |      |                   |

## #4 % of all individuals that are stenothermal coolwater and coldwater species

|                        |                        |                 |                   |
|------------------------|------------------------|-----------------|-------------------|
| Northern Brook Lamprey | Burbot                 | # cold and cool | 129 = 5 %         |
| Southern Brook Lamprey | Musky                  | total # of fish |                   |
| American Brook Lamprey | Longnose Sucker        | 2703            |                   |
| Rainbow Trout          | Brook Stickleback      |                 |                   |
| Brook Trout            | Northern Redbelly Dace |                 |                   |
| Brown Trout 85         | Finescale Dace         | 86 - 100% = 20  | <b>SCORE</b><br>0 |
| Mottled Sculpin 44     | Redside Dace           | 43 - 85% = 10   |                   |
| Brassy Minnow          | Pearl Dace             | 0 - 42% = 0     |                   |

## #5 % of Salmonid individuals that are Brook Trout

|                  |     |     |                   |
|------------------|-----|-----|-------------------|
| # of Brook Trout | 0 = | 0 % | 96 - 100% = 20    |
| Total # of Trout | 85  |     | 5 - 95% = 10      |
|                  |     |     | 0 - 4% = 0        |
|                  |     |     | <b>SCORE</b><br>0 |

|                  |                    |                          |                                 |
|------------------|--------------------|--------------------------|---------------------------------|
| Integrity Rating | 100 - 90 Excellent | <b>TOTAL SCORE</b><br>20 |                                 |
|                  | 80 - 60 Good       |                          |                                 |
|                  | 50 - 30 Fair       |                          | <b>INTEGRITY RATING</b><br>POOR |
|                  | 20 - 10 Poor       |                          |                                 |
|                  | 0 Very Poor        |                          |                                 |

Date # 125220

Site mile: 71.0 Quad: Verona  
Stream order 4

Department of Natural Resources

STREAM ELECTROFISHING DATA COLLECTION SHEET

Rev. 4-92

Run #: 181 Page #: 181

Form 3600-183

Water: Sugar R MWB Code: 875300 Date: 9/6/02 County: Dane Collector: JH, JS, MS, JA

Tax Fish: ALL Survey Type: 1B1 Mark Given: ADIPOSE H2O Temp: 62°F Time: 10:35

Starting Location: Range Trail Ending Location: 607m upstream bridge Station: #8

Township: SN Range: BE Sections: 3 1/16 Section: SW 1/4 Section: SE Latitude: 42.9337 Longitude: 89.5203

Weather: Clear H2O Conduct: H2O Level (low/normal/high) H2O Clarity (clear/turbid/very turbid)

Volts: 200 Amps: 4.5 Current Type (AC/DC/Pulsed DC) # Dippers: (12/30) Dipnet Mesh: 8 MESH

Pulse Rate: Duty Cycle: Type of Pass: (Up/Down)

Start: 42° 56' 1.2" N 89° 31' 34.6" W  
End: 42° 55' 51.4" N 89° 31' 52.8" W

Gear Type: Stream Boat Start Time: 10:40 End Time: 1330

Distance Shocked: 607m

| STATION | SPECIES            | LENGTH | COUNT | WEIGHT             |
|---------|--------------------|--------|-------|--------------------|
| 1       | Brown              | 11.7   | 13.0  | 10.8               |
| 2       |                    | 12.1   | 12.6  | 11.2               |
| 3       |                    | 14.1   | 12.4  | 11.3               |
| 4       |                    | 9.6    | 9.5   | 9.0                |
| 5       |                    | 11.7   | 8.5   | 8.4                |
| 6       |                    | 10.1   | 8.8   | 7.4                |
| 7       |                    | 11.6   | 12.0  | 11.5               |
| 8       |                    | 8.9    | 11.0  | 3.3                |
| 9       |                    | 7.3    | 7.3   | 9.1                |
| 10      |                    | 3.4    | 9.2   | 13.3               |
| 11      |                    | 8.0    | 8.2   | 4.2                |
| 12      |                    | 3.8    | 9.8   | 3.6                |
| 13      |                    | 3.0    | 6.5   | 11.3               |
| 14      |                    | 4.0    | 4.3   | 12.9               |
| 15      |                    | 16.3   | 4.5   | 12.6               |
| 16      |                    | 13.3   | 8.8   | 7.6                |
| 17      |                    | 14.6   | 6.5   | 8.9                |
| 18      |                    | 12.4   | 4.2   | 12.2               |
| 19      |                    | 10.7   | 3.3   | 3.6                |
| 20      |                    | 8.8    | 3.7   | 3.5                |
| 21      |                    | 13.4   | 3.7   | 2.2                |
| 22      |                    | 9.3    | 4.0   | TOTALS             |
| 23      |                    | 13.6   | 7.3   | BROWN              |
| 24      |                    | 12.0   | 3.1   | SHORTHEAD REDHORSE |
| 25      |                    | 8.8    | 3.1   | BLACK BULLHEAD     |
| 26      |                    | 9.0    | 4.0   | N. HOGSUCKER       |
| 27      |                    | 9.1    | 3.6   | SPOTFIN SHINER     |
| 28      |                    | 12.4   | 3.5   | COMMON SHINER      |
| 29      |                    | 9.1    | 3.8   | FATHEAD            |
| 30      |                    | 3.3    | 3.5   | C. STONEROLLER     |
| 31      |                    | 9.2    | 3.1   | LMB                |
| 32      |                    | 3.9    | 3.3   | SMB                |
| 33      |                    | 8.2    | 9.4   | SAND SHINER        |
| 34      |                    | 3.9    | 11.5  | M. SCULPIN         |
| 35      |                    | 9.6    | 13.5  | G. SUNFISH         |
| 36      | Shorthead Redhorse |        |       | N. SUCKER          |
| 37      |                    |        |       | C. CHUB            |
| 38      | Blackside Darter   |        |       | JOHNNY DARTER      |
| 39      |                    |        |       | COMMON CARP        |
| 40      | Black Bullhead     |        |       | BLUNTNOSE MINNOW   |

Northern Hog sucker

| STATION | SPECIES              | LENGTH                            | COUNT | WEIGHT |
|---------|----------------------|-----------------------------------|-------|--------|
| 41      |                      |                                   |       |        |
| 42      | Spotfin Shiner       |                                   |       |        |
| 43      |                      |                                   |       |        |
| 44      |                      |                                   |       |        |
| 45      | Common Shiner        |                                   |       |        |
| 46      |                      |                                   |       |        |
| 47      | Fathead Minnow       |                                   |       |        |
| 48      |                      |                                   |       |        |
| 49      |                      |                                   |       |        |
| 50      | Central Stone Roller |                                   |       |        |
| 51      |                      |                                   |       |        |
| 52      |                      |                                   |       |        |
| 53      | LMB                  | 3.6                               | 3.6   |        |
| 54      | SMB                  | 5.3                               | 5.5   |        |
| 55      |                      |                                   |       |        |
| 56      | Sand Shiner          | 12                                |       |        |
| 57      | 31                   |                                   |       |        |
| 58      |                      |                                   |       |        |
| 59      |                      |                                   |       |        |
| 60      | Mottled Sculpin      |                                   |       |        |
| 61      | Green Sunfish        |                                   |       |        |
| 62      |                      |                                   |       |        |
| 91      | White Sucker         | 25, 53, 11, 33, 1                 |       |        |
| 10      | White Sucker         | 41, 37, 54, 1, 4, 23, 42, 40, 41, |       |        |
| 1       |                      |                                   |       |        |
| 18      |                      |                                   |       |        |
| 38      |                      |                                   |       |        |
| 37      |                      |                                   |       |        |
| 20      |                      |                                   |       |        |
| 143     |                      |                                   |       |        |
| 2       |                      |                                   |       |        |
| 2       |                      |                                   |       |        |
| 328     |                      |                                   |       |        |
| 3       |                      |                                   |       |        |
| 2       |                      |                                   |       |        |
| 403     |                      |                                   |       |        |
| 18      |                      |                                   |       |        |
| 59      |                      |                                   |       |        |
| 11      |                      |                                   |       |        |
| 463     |                      |                                   |       |        |

3 1652

# COLDWATER IBI DATA COLLECTION

|             |       |               |                                     |            |            |
|-------------|-------|---------------|-------------------------------------|------------|------------|
|             |       | Date          | 9/6/02                              | Station #  | 8          |
| Stream      | SUGAR | County        | Grant - Iowa - Lafayette - Richland |            |            |
| Water Level |       | Water Clarity | clear - turbid - v turbid           | Equipment  |            |
| Volts       |       | Amps          |                                     | Pulse Rate | Duty Cycle |
| Net Mesh    | 3/16  | # Dippers     | 1 - 2                               | Start Time | End Time   |

RANGE TRAIL  
607 m

## #1 Number of intolerant Species (For example 3 Brook Trout Count As 1 Species, not 3)

|                   |                   |                   |           |
|-------------------|-------------------|-------------------|-----------|
| N. Hog Sucker ✓   | Brook Trout       | Smallmouth Bass ✓ | # Species |
| Rock Bass         | Redside Dace      | Rainbow Darter    | = 3       |
| Least Darter      | Mottled Sculpin ✓ | Iowa Darter       | ≥ 2 = 20  |
| Banded Darter     | Greater Redhorse  | Blacknose Shiner  | 1 = 10    |
| Blackchin Shiner  | Rosyface Shiner   | Spottail Shiner   | 0 = 0     |
| Am. Brook Lamprey | N. Brook Lamprey  | Chestnut Lamprey  |           |
| Sea Lamprey       | Silver Lamprey    |                   |           |

**SCORE**  
20

## #2 % of individuals that are tolerant species

|               |                      |                           |       |      |
|---------------|----------------------|---------------------------|-------|------|
| Carp 11       | Blacknose Dace       | # of tolerant individuals | 915 = | 55 % |
| Mudminnow     | Yellow Bullhead      | Total # of fish           | 1652  |      |
| Creek Chub 18 | G. Sunfish           | 0 - 5 % = 20              |       |      |
| W. Sucker 403 | Fathead Minnow 20    | 6 - 22% = 10              |       |      |
| G. Shiner     | Bluntnose Minnow 463 | 23 - 100% = 0             |       |      |

**SCORE**  
0

## #3 % of all individuals that are top carnivore

|           |                   |                    |      |     |
|-----------|-------------------|--------------------|------|-----|
| N. Pike   | Brook Trout       | # of top carnivore | 95 = | 6 % |
| Musky     | Brown Trout 91    | total # of fish    | 1652 |     |
| Burbot    | Rainbow Trout     | 46 - 100% = 20     |      |     |
| Walleye   | Smallmouth Bass 2 | 15 - 45% = 10      |      |     |
| Rock Bass | Largemouth Bass 2 | 0 - 14% = 0        |      |     |

**SCORE**  
0

## #4 % of all individuals that are stenothermal coolwater and coldwater species

|                        |                        |                 |
|------------------------|------------------------|-----------------|
| Northern Brook Lamprey | Burbot                 | # cold and cool |
| Southern Brook Lamprey | Musky                  | total # of fish |
| American Brook Lamprey | Longnose Sucker        | 94 = 6 %        |
| Rainbow Trout          | Brook Stickleback      | 1652            |
| Brook Trout            | Northern Redbelly Dace |                 |
| Brown Trout 91         | Finescale Dace         | 86 - 100% = 20  |
| Mottled Sculpin 3      | Redside Dace           | 43 - 85% = 10   |
| Brassy Minnow          | Pearl Dace             | 0 - 42% = 0     |

**SCORE**  
0

## #5 % of Salmonid individuals that are Brook Trout

|                  |     |     |                |
|------------------|-----|-----|----------------|
| # of Brook Trout | 0 = | 0 % | 96 - 100% = 20 |
| Total # of Trout | 91  |     | 5 - 95% = 10   |
|                  |     |     | 0 - 4% = 0     |

**SCORE**  
0

Integrity Rating

100 - 90 Excellent  
80 - 60 Good  
50 - 30 Fair  
20 - 10 Poor  
0 Very Poor

TOTAL SCORE

20

INTEGRITY RATING

POOR

Run #: 1 Page #: 17 20 Survey # 50305 Site # 125214 Quad: Verona Stream order 4

Water: Sugar R. MWB Code: 875300 Date: 9/26/02 County: DANE Collector: JH, JS, JA, LC

Fish: ALL Survey Type: 1B1 Mark Given: ADIPOSE H<sub>2</sub>O Temp: 56° Time: 9:45

Starting Location: BRIDGE King - Bruce Co. Ending Location: Concrete footbridge - 620m Station:

Township: SN Range: BE Sections: 3 1/16 Section: SW 1/4 Section: NW Latitude: 42° 56' 22.9" Longitude: 89° 32' 29.1"

Weather: Sunny 60° H<sub>2</sub>O Conduct: H<sub>2</sub>O Level (low/normal/high) H<sub>2</sub>O Clarity (clear/turbid/very turbid)

Volts: 150 Amps: 4 Current Type: (AC/DC/Pulsed DC) # Dippers: (1/2/3) Dipnet Mesh: 1/8" 71m to Bridge

Pulse Rate: Duty Cycle: Type of Pass: (Up/Down) END 42° 56' 31.5" 89° 32' 32.4"

Gear Type: Lg. Stream boat Start Time: 10:55 End Time: 14:20 Distance Shocked: 620m

| STATION | SPECIES | LENGTH | COUNT         | WEIGHT    | STATION | SPECIES | LENGTH | COUNT               | WEIGHT |
|---------|---------|--------|---------------|-----------|---------|---------|--------|---------------------|--------|
| 1       | Brown   | 11.3   | 3.8 Recap     |           | 41      | 11.7    |        |                     |        |
| 2       | "       | 7.9    | Recap ADIPOSE |           | 42      | 8.4     |        |                     |        |
| 3       |         | 9.3    |               |           | 43      | 4.8     |        |                     |        |
| 4       |         | 8.8    | 7.6           | 13.2      | 44      | 4.9     |        |                     |        |
| 5       |         | 9.7    | 11.5          | 11.6      | 45      | 8.6     |        |                     |        |
| 6       |         | 10.3   | 12.7          | 14.4      | 46      | 4.6     |        |                     |        |
| 7       |         | 9.5    | 8.1           | 10.0      | 47      | 4.5     |        |                     |        |
| 8       |         | 8.4    | 13.1          | 8.3       | 48      | 20.9    |        |                     |        |
| 9       |         | 7.3    | 12.1          | 9.6       | 49      | 13.5    |        |                     |        |
| 10      |         | 9.7    | 12.4          | 12.2      | 50      | 12.3    |        |                     |        |
| 11      |         | 8.9    | 13.3          | 5.1       | 51      | 11.2    |        |                     |        |
| 12      |         | 4.0    | 12.3          | 9.1       | 52      | 14.0    |        |                     |        |
| 13      |         | 5.2    | 11.9          | 5.0       | 53      | 9.7     |        |                     |        |
| 14      |         | 9.1    | 12.0          | 4.1       | 54      | 9.0     |        | TOTAL(S)            |        |
| 15      |         | 5.7    | 13.0          | 4.3       | 55      | 16.5    |        | BROWN TROUT         | 178    |
| 16      |         | 4.8    | 11.2          | 4.8       | 56      | 9.4     |        | WHITE SUCKER        | 502    |
| 17      |         | 5.1    | 13.5          | 4.5       | 57      | 10.7    |        | CREEK CHUB          | 14     |
| 18      |         | 4.8    | 10.9          | 4.8       | 58      | 9.3     |        | FANTAIL DANIEL      | 98     |
| 19      |         | 4.6    | 11.7          | 3.5       | 59      | 3.8     |        | JOHNNT DANIEL       | 106    |
| 20      |         | 5.4    | 10.6          | 11.5      | 60      | 7.0     |        | MOTTLED SCULPIN     | 8      |
| 21      |         | 5.0    | 12.9          | 4.7       | 61      | 3.6     |        | COMMON CARP         | 32     |
| 22      |         | 5.3    | 9.0           | 4.7       | 62      | 11.5    |        | Central Stoneworm   | 8      |
| 23      |         | 9.1    | 10.5          | 4.8       | 63      | 8.6     |        | Northern Hog Sucker | 24     |
| 24      |         | 4.2    | 11.6          | 5.2       | 64      | 3.3     |        | Shorthead Redhorse  | 13     |
| 25      |         | 4.4    | 9.0           | 3.6       | 65      | 4.4     |        | Bluntnose Minnow    | 33     |
| 26      |         | 3.9    | 11.9          | 4.2       | 66      | 3.8     |        | SAND SHINNER        | 7      |
| 27      |         | 3.7    | 9.8           | 5.2       | 67      |         |        | Fathead Minnow      | 6      |
| 28      |         | 9.9    | 10.2          | 7.2       | 68      |         |        | Green Sunfish       | 1      |
| 29      |         | 8.9    | 10.0          | 4.3       | 69      |         |        | Black-sided Darter  | 1      |
| 30      |         | 3.3    | 13.6          | 3.5       | 70      |         |        | Bluegill            | 5      |
| 31      |         | 3.8    | 7.9           | 3.7       | 71      |         |        | Black Crappie       | 1      |
| 32      |         | 4.3    | 9.6           | 7.4       | 72      |         |        | LMB                 | 2      |
| 33      |         | 4.8    | 6.9           | 5.5       | 73      |         |        | Storcat             | 1      |
| 34      |         | 4.6    | 8.9           | 9.2 recap | 74      |         |        |                     |        |
| 35      |         | 6.2    | 4.7           | 5.1       | 75      |         |        |                     |        |
| 36      |         | 3.2    | 4.5           | 5.2       | 76      |         |        |                     |        |
| 37      |         | 3.2    | 3.7           | 4.2       | 77      |         |        |                     |        |
| 38      |         | 4.8    | 3.3           | 3.9       | 78      |         |        |                     |        |
| 39      |         | 12.6   | 17.2          | 4.1       | 79      |         |        |                     |        |
| 40      |         | 15.6   | 11.8          | 4.1       | 80      |         |        |                     |        |
|         |         | 40     | 38            | 37        |         |         |        |                     | 1040   |

Run #: 1 Page #: 2 of 2

Water: Sugar River MWB Code: \_\_\_\_\_ Date: 7/26/02 County: Dane Collector: \_\_\_\_\_

Fish: \_\_\_\_\_ Survey Type: \_\_\_\_\_ Mark Given: \_\_\_\_\_ H<sub>2</sub>O Temp: 58°F Time: 1115

Starting Location: \_\_\_\_\_ Ending Location: \_\_\_\_\_ Station: \_\_\_\_\_

Township: \_\_\_\_\_ Range: \_\_\_\_\_ Sections: \_\_\_\_\_ 1/16 Section: \_\_\_\_\_ 1/4 Section: \_\_\_\_\_ Latitude: \_\_\_\_\_ Longitude: \_\_\_\_\_

Weather: \_\_\_\_\_ H<sub>2</sub>O Conduct: \_\_\_\_\_ H<sub>2</sub>O Level (low/normal/high) \_\_\_\_\_ H<sub>2</sub>O Clarity (clear/turbid/very turbid) \_\_\_\_\_

Volts: \_\_\_\_\_ Amps: \_\_\_\_\_ Current Type (AC/DC/Pulsed DC) \_\_\_\_\_ # Dippers: (1/2/3) \_\_\_\_\_ Dipnet Mesh: \_\_\_\_\_

Pulse Rate: \_\_\_\_\_ Duty Cycle: \_\_\_\_\_ Type of Pass: (Up/Down) \_\_\_\_\_

Gear Type: \_\_\_\_\_ Start Time: \_\_\_\_\_ End Time: \_\_\_\_\_ Distance Shocked: \_\_\_\_\_

| STATION | SPECIES             | LENGTH                  | COUNT                   | WEIGHT   | STATION | SPECIES      | LENGTH              | COUNT                 | WEIGHT  |
|---------|---------------------|-------------------------|-------------------------|----------|---------|--------------|---------------------|-----------------------|---------|
| 1       |                     |                         |                         |          | 41      |              |                     |                       |         |
| 2       | White Sucker        | THL THL THL             | UHT UHT UHT UHT         |          | 42      | White Sucker | UHT UHT UHT UHT UHT | UHT UHT               |         |
| 3       |                     | UHT UHT UHT             | UHT UHT UHT UHT UHT     |          | 43      | UHT UHT      | UHT UHT             | UHT UHT UHT UHT       | UHT UHT |
| 4       |                     | UHT UHT UHT UHT         | UHT UHT UHT UHT UHT UHT |          | 44      | UHT UHT      | UHT UHT             | UHT UHT UHT UHT       | UHT UHT |
| 5       |                     |                         |                         | 80 (150) | 45      | UHT UHT      | UHT UHT             | UHT UHT UHT UHT       | UHT UHT |
| 6       | Crayfish            | UHT UHT                 | UHT UHT                 |          | 46      | UHT UHT      | UHT UHT             | UHT UHT UHT UHT       | UHT UHT |
| 7       |                     |                         |                         |          | 47      | UHT UHT      | UHT UHT             | UHT UHT UHT UHT       | UHT UHT |
| 8       |                     |                         |                         |          | 48      | UHT UHT      | UHT UHT             | UHT UHT UHT UHT       | UHT UHT |
| 9       |                     |                         |                         |          | 49      | UHT UHT      | UHT UHT             | UHT UHT UHT UHT       | UHT UHT |
| 10      | FANTAIL DARTER      | THL THL THL THL THL THL |                         |          | 50      |              |                     | 70(5) = 350 + 2 = 352 |         |
| 11      |                     | THL THL THL THL THL THL | UHT UHT                 |          | 51      |              |                     |                       |         |
| 12      |                     |                         |                         |          | 52      |              |                     |                       |         |
| 13      | Johnny Darters      | THL THL THL THL         | UHT UHT                 |          | 53      |              |                     |                       |         |
| 14      |                     | UHT UHT UHT UHT         | UHT UHT                 |          | 54      |              |                     |                       |         |
| 15      |                     | UHT UHT UHT UHT         | UHT UHT                 |          | 55      |              |                     |                       |         |
| 16      |                     | UHT UHT UHT             | UHT UHT                 |          | 56      |              |                     |                       |         |
| 17      | Mottled Sculpin     | UHT                     | UHT UHT                 |          | 57      |              |                     |                       |         |
| 18      |                     |                         |                         |          | 58      |              |                     |                       |         |
| 19      |                     |                         |                         |          | 59      |              |                     |                       |         |
| 20      | Common Carp         | UHT UHT UHT             | UHT UHT                 |          | 60      |              |                     |                       |         |
| 21      |                     | UHT UHT                 |                         |          | 61      |              |                     |                       |         |
| 22      |                     |                         |                         |          | 62      |              |                     |                       |         |
| 23      |                     |                         |                         |          | 63      | BLACKSIDED 1 |                     |                       |         |
| 24      | Central Stonewormer | UHT UHT                 |                         |          | 64      | DARTER       |                     |                       |         |
| 25      |                     |                         |                         |          | 65      |              |                     |                       |         |
| 26      | Hy Sucker           | UHT UHT UHT UHT         | UHT UHT                 |          | 66      | BLUEGILL     | 3.0                 | 4.0                   | 3.1     |
| 27      |                     |                         |                         |          | 67      |              | 2.5                 | 4.2                   |         |
| 28      | Shorthead Redhorse  | UHT UHT                 | UHT UHT                 |          | 68      | B. CARP      | 5.5                 |                       |         |
| 29      |                     |                         |                         |          | 69      |              |                     |                       |         |
| 30      | <del>Carp</del>     |                         |                         |          | 70      | LMB          | 2.2                 |                       |         |
| 31      |                     |                         |                         |          | 71      |              | 3.1                 |                       |         |
| 32      | Bluntnose minnow    | UHT UHT UHT UHT         | UHT UHT                 |          | 72      |              |                     |                       |         |
| 33      |                     | UHT UHT                 | UHT UHT                 |          | 73      |              |                     |                       |         |
| 34      | Sand shiner         | UHT UHT                 |                         |          | 74      |              |                     |                       |         |
| 35      |                     |                         |                         |          | 75      |              |                     |                       |         |
| 36      | Fathead Minnow      | UHT UHT                 |                         |          | 76      |              |                     |                       |         |
|         | Stone Cat           |                         | 1                       |          | 77      |              |                     |                       |         |
|         | Common Sunfish      |                         | 1                       |          | 78      |              |                     |                       |         |
|         |                     |                         |                         |          | 79      |              |                     |                       |         |
|         |                     |                         |                         |          | 80      |              |                     |                       |         |

# COLDWATER IBI DATA COLLECTION

|             |                       |               |           |                     |            |
|-------------|-----------------------|---------------|-----------|---------------------|------------|
| Date        |                       |               | 9-26-02   | Station #           | 1          |
| Stream      | Sugar River @ Brookl. |               | County    | Dane - Green - Iowa |            |
| Water Level | norm                  | Water Clarity | clear     | turbid - v turbid   | Equipment  |
| Volts       | 150                   | Amps          | 4         | Pulse Rate          | Duty Cycle |
| Net Mesh    | 1/8                   | # Dippers     | 1 - 2 (3) | Start Time          | 1055       |
|             |                       |               |           | End Time            | 1420       |

## #1 Number of intolerant Species (For example 3 Brook Trout Count As 1 Species, not 3)

|                   |                   |                  |           |   |
|-------------------|-------------------|------------------|-----------|---|
| N. Hog Sucker X   | Brook Trout       | Smallmouth Bass  | # Species | <div style="border: 1px solid black; padding: 5px; display: inline-block;">SCORE</div><br><span style="font-size: 2em;">20</span> |
| Rock Bass         | Redside Dace      | Rainbow Darter   | = 2       |   |
| Least Darter      | Mottled Sculpin X | Iowa Darter      | ≥ 2 = 20  |   |
| Banded Darter     | Greater Redhorse  | Blacknose Shiner | 1 = 10    |   |
| Blackchin Shiner  | Rosyface Shiner   | Spottail Shiner  | 0 = 0     |   |
| Am. Brook Lamprey | N. Brook Lamprey  | Chestnut Lamprey |           |   |
| Sea Lamprey       | Silver Lamprey    |                  |           |   |

## #2 % of individuals that are tolerant species

|               |                     |                           |       |     |  |
|---------------|---------------------|---------------------------|-------|-----|--|
| Carp 32       | Blacknose Dace      | # of tolerant individuals | 588 = | 51% | <div style="border: 1px solid black; padding: 5px; display: inline-block;">SCORE</div><br><span style="font-size: 2em;">0</span> |
| Mudminnow     | Yellow Bullhead     | Total # of fish           | 1040  |     |  |
| Creek Chub 14 | G. Sunfish 1        | 0 - 5% = 20               |       |     |  |
| W. Sucker 502 | Fathead Minnow 6    | 6 - 22% = 10              |       |     |  |
| G. Shiner     | Bluntnose Minnow 33 | 23 - 100% = 0             |       |     |  |

## #3 % of all individuals that are top carnivore

|           |                   |                    |       |     |   |
|-----------|-------------------|--------------------|-------|-----|---|
| N. Pike   | Brook Trout       | # of top carnivore | 180 = | 17% | <div style="border: 1px solid black; padding: 5px; display: inline-block;">SCORE</div><br><span style="font-size: 2em;">10</span> |
| Musky     | Brown Trout 178   | total # of fish    | 1040  |     |   |
| Burbot    | Rainbow Trout     | 46 - 100% = 20     |       |     |   |
| Walleye   | Smallmouth Bass   | 15 - 45% = 10      |       |     |   |
| Rock Bass | Largemouth Bass 2 | 0 - 14% = 0        |       |     |   |

## #4 % of all individuals that are stenothermal coolwater and coldwater species

|                        |                        |                 |  |
|------------------------|------------------------|-----------------|--|
| Northern Brook Lamprey | Burbot                 | # cold and cool | <div style="border: 1px solid black; padding: 5px; display: inline-block;">SCORE</div><br><span style="font-size: 2em;">0</span> |
| Southern Brook Lamprey | Musky                  | total # of fish |  |
| American Brook Lamprey | Longnose Sucker        | 186 =           |  |
| Rainbow Trout          | Brook Stickleback      | 1040            |  |
| Brook Trout            | Northern Redbelly Dace |                 |  |
| Brown Trout 178        | Finescale Dace         | 86 - 100% = 20  |  |
| Mottled Sculpin 8      | Redside Dace           | 43 - 85% = 10   |  |
| Brassy Minnow          | Pearl Dace             | 0 - 42% = 0     |  |

## #5 % of Salmonid individuals that are Brook Trout

|                  |     |    |                |  |
|------------------|-----|----|----------------|--|
| # of Brook Trout | 0 = | 0% | 96 - 100% = 20 | <div style="border: 1px solid black; padding: 5px; display: inline-block;">SCORE</div><br><span style="font-size: 2em;">0</span> |
| Total # of Trout | 178 |    | 5 - 95% = 10   |  |
|                  |     |    | 0 - 4% = 0     |  |

|   |                    |  |
|---|--------------------|--|
| <div style="border: 1px solid black; padding: 5px; display: inline-block;">Integrity Rating</div> | 100 - 90 Excellent | <div style="border: 1px solid black; padding: 5px; display: inline-block;">TOTAL SCORE</div><br><span style="font-size: 2em;">30</span>        |
|   | 80 - 60 Good       |  |
|   | 50 - 30 Fair       |  |
|   | 20 - 10 Poor       |  |
|   | 0 Very Poor        | <div style="border: 1px solid black; padding: 5px; display: inline-block;">INTEGRITY RATING</div><br><span style="font-size: 2em;">Fair</span> |

Run #: 1861 Page #: 1 of 1 Form 3600-183 Site miles 69.9 stream order 4  
 Water: Sugar R. MWB Code: 875300 Date: 9/3/02 County: DANE Collector: JH, JS, LC, RS  
 Target Fish: ALL Survey Type: 1B1 Mark Given: NONE H<sub>2</sub>O Temp: 70° Time: 12:50

Starting Location: SARBAKERS Ending Location: \_\_\_\_\_ Station: #10

Township: SN Range: 8E Sections: 11 1/16 Section: SW 1/4 Section: NW Latitude: 42°55'00" Longitude: 89°31'14.4"

Weather: \_\_\_\_\_ H<sub>2</sub>O Conduct: \_\_\_\_\_ H<sub>2</sub>O Level (low/normal/high) 42.9222 H<sub>2</sub>O Clarity (clear/turbid/very turbid) 89.5207  
 Volts: 250 Amps: 4 Current Type (AC/DC/Pulsed DC) DC # Dippers: (1/2/3/) Dipnet Mesh: 1/8" END GPS  
 Pulse Rate: \_\_\_\_\_ Duty Cycle: \_\_\_\_\_ Type of Pass: (Up/Down) 42°55'23.0"  
89°31'22.8"

Gear Type: Lg. Streamboat Start Time: 12:50 End Time: 13:55 Distance Shocked: 296 m (measured from Navigator)

| STATION | SPECIES | LENGTH | COUNT | WEIGHT | STATION | SPECIES    | LENGTH | COUNT | WEIGHT |
|---------|---------|--------|-------|--------|---------|------------|--------|-------|--------|
| 1       | BROWN   | 12.4   | 3.7   | 3.3    | 41      |            |        |       |        |
| 2       |         | 13.3   | 3.7   | 4.1    | 42      |            |        |       |        |
| 3       |         | 13.9   | 7.7   | 3.1    | 43      |            |        |       |        |
| 4       |         | 18.1   | 8.2   | 3.1    | 44      | FATHEAD    | 111    |       |        |
| 5       |         | 14.5   | 3.6   | 3.5    | 45      |            |        |       |        |
| 6       |         | 13.0   | 3.7   | 21.5   | 46      | G. SUNFISH | 11     |       |        |
| 7       |         | 14.3   | 3.8   | 15.8   | 47      |            |        |       |        |
| 8       |         | 13.7   | 14.2  | 14.7   | 48      | GOLDEN     | 111    | 111   | 111    |
| 9       |         | 9.4    | 8.7   | 11.2   | 49      | REDHOSE    |        |       |        |
| 10      |         | 8.9    | 12.0  | 12.8   | 50      |            |        |       |        |
| 11      |         | 17.0   | 14.3  | 12.1   | 51      |            |        |       |        |
| 12      |         | 11.0   | 14.3  | 13.5   | 52      | SHORTHEAD  | 111    | 111   | 111    |
| 13      |         | 11.4   | 15.0  | 14.1   | 53      | REDHOSE    | 111    | 111   | 111    |
| 14      |         | 13.5   | 15.7  | 10.8   | 54      |            |        |       |        |
| 15      |         | 12.6   | 14.3  | 10.7   | 55      | SCULPIN    | 1      |       |        |
| 16      |         | 10.0   | 15.0  | 7.2    | 56      |            |        |       |        |
| 17      |         | 7.8    | 7.7   | 7.8    | 57      |            |        |       |        |
| 18      |         | 13.2   | 8.4   | 7.3    | 58      | W. SUCKER  | 111    | 111   | 111    |
| 19      |         | 12.8   | 18.1  | 8.2    | 59      |            |        |       |        |
| 20      |         | 9.5    | 16.2  | 4.1    | 60      |            |        |       |        |
| 21      |         | 12.6   | 13.0  | 3.8    | 61      |            |        |       |        |
| 22      |         | 13.0   | 10.9  | 8.0    | 62      |            |        |       |        |
| 23      |         | 8.5    | 8.4   | 7.5    | 63      | HOLYSUCKER | 111    | 111   | 111    |
| 24      |         | 11.4   | 12.1  |        | 64      |            |        |       |        |
| 25      |         | 10.4   | 15.7  |        | 65      |            |        |       |        |
| 26      |         | 10.7   | 8.4   |        | 66      | HORNHEAD   | 111    | 1     |        |
| 27      |         | 11.3   | 8.6   |        | 67      |            |        |       |        |
| 28      |         | 9.2    | 11.8  |        | 68      | C. CHUB    | 1111   |       |        |
| 29      |         | 8.7    | 10.7  |        | 69      |            |        |       |        |
| 30      |         | 8.2    | 3.9   |        | 70      | S. DARTER  | 111    | 111   | 111    |
| 31      |         | 12.3   | 11.1  |        | 71      |            |        |       |        |
| 32      |         | 8.5    | 9.1   |        | 72      |            |        |       |        |
| 33      |         | 7.2    | 7.7   |        | 73      | BLUNTNOSE  | 111    | 111   | 111    |
| 34      |         | 7.5    | 10.5  |        | 74      |            |        |       |        |
| 35      |         | 4.3    | 10.6  |        | 75      | FANTAIL    | 111    | 111   | 111    |
| 36      |         | 9.5    | 9.3   |        | 76      |            |        |       |        |
| 37      |         | 4.0    | 7.6   |        | 77      | CARP       | 11     |       |        |
| 38      |         | 6.8    | 6.9   |        | 78      |            |        |       |        |
| 39      |         | 7.7    | 2.9   |        | 79      | SPOTFIN    | 1      |       |        |
| 40      |         | 6.6    | 6.3   |        | 80      |            |        |       |        |

BROWN 103  
 FATHEAD 3  
 G. SUNFISH 2  
 SHORTHEAD 57  
 REDHOSE 57  
 SCULPIN 1  
 W. SUCKER 300  
 HORNHEAD 6  
 C. CHUB 4  
 FANTAIL 21  
 CARP 2  
 SPOTFIN 1  
**TOTAL**

data entered and proofed Feb 2003

# COLDWATER IBI DATA COLLECTION

SARBACHER

|             |               |                           |            |                                     |
|-------------|---------------|---------------------------|------------|-------------------------------------|
| Date        |               | 9/3/02                    | Station #  | 10                                  |
| Stream      | SUGAR         |                           | County     | Grant - Iowa - Lafayette - Richland |
| Water Level | Water Clarity | clear - turbid - v turbid | Equipment  |                                     |
| Flts        | Amps          | Pulse Rate                | Duty Cycle |                                     |
| Net Mesh    | 3/16          | # Dippers                 | 1 - 2      | Start Time                          |
|             |               |                           |            | End Time                            |

## #1 Number of intolerant Species (For example 3 Brook Trout Count As 1 Species, not 3)

|                   |                   |                  |                  |             |
|-------------------|-------------------|------------------|------------------|-------------|
| N. Hog Sucker ✓   | Brook Trout       | Smallmouth Bass  | # Species<br>= 2 | SCORE<br>20 |
| Rock Bass         | Redside Dace      | Rainbow Darter   |                  |             |
| Least Darter      | Mottled Sculpin ✓ | Iowa Darter      | > 2 = 20         |             |
| Banded Darter     | Greater Redhorse  | Blacknose Shiner | 1 = 10           |             |
| Blackchin Shiner  | Rosyface Shiner   | Spottail Shiner  | 0 = 0            |             |
| Am. Brook Lamprey | N. Brook Lamprey  | Chestnut Lamprey |                  |             |
| Sea Lamprey       | Silver Lamprey    |                  |                  |             |

## #2 % of individuals that are tolerant species

|            |     |                  |                           |               |       |
|------------|-----|------------------|---------------------------|---------------|-------|
| Carp       | 2   | Blacknose Dace   | # of tolerant individuals | 339 =         | 54 %  |
| Mudminnow  |     | Yellow Bullhead  | Total # of fish           | 629           |       |
| Creek Chub | 4   | G. Sunfish       | 2                         | 0 - 5 % = 20  |       |
| W. Sucker  | 300 | Fathead Minnow   | 3                         | 6 - 22% = 10  | SCORE |
| G. Shiner  |     | Bluntnose Minnow | 28                        | 23 - 100% = 0 |       |

## #3 % of all individuals that are top carnivore

|           |                 |                    |                 |       |
|-----------|-----------------|--------------------|-----------------|-------|
| Pike      | Brook Trout     | # of top carnivore | 103 =           | 16 %  |
| Musky     | Brown Trout     | 103                | total # of fish | 629   |
| Burbot    | Rainbow Trout   | 46 - 100% = 20     |                 |       |
| Walleye   | Smallmouth Bass | 15 - 45% = 10      |                 | SCORE |
| Rock Bass | Largemouth Bass | 0 - 14% = 0        |                 | 10    |

## #4 % of all individuals that are stenothermal coolwater and coldwater species

|                        |                        |                 |                |
|------------------------|------------------------|-----------------|----------------|
| Northern Brook Lamprey | Burbot                 | # cold and cool | 104 = 16 %     |
| Southern Brook Lamprey | Musky                  | total # of fish |                |
| American Brook Lamprey | Longnose Sucker        |                 |                |
| Rainbow Trout          | Brook Stickleback      | 629             |                |
| Brook Trout            | Northern Redbelly Dace |                 |                |
| Brown Trout            | 103                    | Finescale Dace  | 86 - 100% = 20 |
| Mottled Sculpin        | 1                      | Redside Dace    | 43 - 85% = 10  |
| Brassy Minnow          |                        | Pearl Dace      | 0 - 42% = 0    |

## #5 % of Salmonid individuals that are Brook Trout

|                  |     |     |                |
|------------------|-----|-----|----------------|
| # of Brook Trout | 0 = | 0 % | 96 - 100% = 20 |
| Total # of Trout | 103 |     | 5 - 95% = 10   |
|                  |     |     | 0 - 4% = 0     |

|                  |                    |                  |
|------------------|--------------------|------------------|
| Integrity Rating | 100 - 90 Excellent | TOTAL SCORE      |
|                  | 80 - 60 Good       | 30               |
|                  | 50 - 30 Fair       | INTEGRITY RATING |
|                  | 20 - 10 Poor       | FAIR             |
|                  | 0 Very Poor        |                  |



# COLDWATER IBI DATA COLLECTION

FRENCHTOWN  
637 m

|               |  |  |                           |            |                                     |            |    |
|---------------|--|--|---------------------------|------------|-------------------------------------|------------|----|
| Stream        |  |  | SUGAR                     | Date       | 9/4/02                              | Station #  | 11 |
| Water Level   |  |  |                           | County     | Grant - Iowa - Lafayette - Richland |            |    |
| Water Clarity |  |  | clear - turbid - v turbid | Equipment  |                                     |            |    |
| Amps          |  |  |                           | Pulse Rate |                                     |            |    |
| Duty Cycle    |  |  |                           | End Time   |                                     |            |    |
| Net Mesh      |  |  | 3/16                      | # Dippers  | 1 - 2                               | Start Time |    |

## #1 Number of intolerant Species (For example 3 Brook Trout Count As 1 Species, not 3)

|                   |                  |                  |  |                           |
|-------------------|------------------|------------------|--|---------------------------|
| N. Hog Sucker ✓   | Brook Trout      | Smallmouth Bass  | # Species<br>= 1<br>$\geq 2 = 20$<br>$1 = 10$<br>$0 = 0$ | <b>SCORE</b><br><b>10</b> |
| Rock Bass         | Redside Dace     | Rainbow Darter   |  |                           |
| Least Darter      | Mottled Sculpin  | Iowa Darter      |  |                           |
| Banded Darter     | Greater Redhorse | Blacknose Shiner |  |                           |
| Blackchin Shiner  | Rosyface Shiner  | Spottail Shiner  |  |                           |
| Am. Brook Lamprey | N. Brook Lamprey | Chestnut Lamprey |  |                           |
| Sea Lamprey       | Silver Lamprey   |                  |  |                           |

## #2 % of individuals that are tolerant species

|            |     |                  |                           |                 |                   |
|------------|-----|------------------|---------------------------|-----------------|-------------------|
| Carp       | 10  | Blacknose Dace   | # of tolerant individuals | 649 =           | 53 %              |
| Mudminnow  |     | Yellow Bullhead  | 1                         | Total # of fish | 1228              |
| Creek Chub | 5   | G. Sunfish       | 2                         | 0 - 5 % = 20    |                   |
| W. Sucker  | 400 | Fathead Minnow   | 8                         | 6 - 22% = 10    |                   |
| G. Shiner  |     | Bluntnose Minnow | 223                       | 23 - 100% = 0   |                   |
|            |     |                  |                           |                 | <b>SCORE</b><br>0 |

## #3 % of all individuals that are top carnivore

|           |                 |                    |                 |      |                   |
|-----------|-----------------|--------------------|-----------------|------|-------------------|
| Pike      | Brook Trout     | # of top carnivore | 52 =            | 4 %  |                   |
| Musky     | Brown Trout     | 48                 | total # of fish | 1228 |                   |
| Burbot    | Rainbow Trout   | 46 - 100% = 20     |                 |      |                   |
| Walleye   | Smallmouth Bass | 15 - 45% = 10      |                 |      |                   |
| Rock Bass | Largemouth Bass | 4                  | 0 - 14% = 0     |      |                   |
|           |                 |                    |                 |      | <b>SCORE</b><br>0 |

## #4 % of all individuals that are stenothermal coolwater and coldwater species

|                        |                        |                 |                         |                   |
|------------------------|------------------------|-----------------|-------------------------|-------------------|
| Northern Brook Lamprey | Burbot                 | # cold and cool | $\frac{48}{1228} = 4\%$ |                   |
| Southern Brook Lamprey | Musky                  | total # of fish |                         |                   |
| American Brook Lamprey | Longnose Sucker        | 48 =            |                         |                   |
| Rainbow Trout          | Brook Stickleback      | 1228            |                         |                   |
| Brook Trout            | Northern Redbelly Dace |                 |                         |                   |
| Brown Trout            | 48                     | Finescale Dace  | 86 - 100% = 20          |                   |
| Mottled Sculpin        | Redside Dace           | 43 - 85% = 10   |                         |                   |
| Brassy Minnow          | Pearl Dace             | 0 - 42% = 0     |                         |                   |
|                        |                        |                 |                         | <b>SCORE</b><br>0 |

## #5 % of Salmonid individuals that are Brook Trout

|                  |     |     |                   |
|------------------|-----|-----|-------------------|
| # of Brook Trout | 0 = | 0 % | 96 - 100% = 20    |
| Total # of Trout | 48  |     | 5 - 95% = 10      |
|                  |     |     | 0 - 4% = 0        |
|                  |     |     | <b>SCORE</b><br>0 |

|                  |                    |             |                  |
|------------------|--------------------|-------------|------------------|
| Integrity Rating | 100 - 90 Excellent | TOTAL SCORE |                  |
|                  | 80 - 60 Good       |             | 10               |
|                  | 50 - 30 Fair       |             | INTEGRITY RATING |
|                  | 20 - 10 Poor       |             | POOR             |
|                  | 0 Very Poor        |             |                  |

Region SCR County Dane Report Date 1/6/05 Classification CWA  
 Water Body: Sugar River - headwaters -> French Town Rd (26 miles)  
 Discharger: no discharge

**If stream is classified as Limited Forage Fish (LFF) or Limited Aquatic Life (LAL), check any of the following Use Attainability Analysis factors that are identified in the classification report:**

- Naturally occurring pollutant concentrations prevent the attainment of use
- Natural, ephemeral, intermittent or low flow conditions or water levels prevent the attainment of the use, unless these conditions may be compensated for by the discharge of sufficient volume of effluent discharges without violating State water conservation requirements to enable uses to be met
- Human caused conditions or sources of pollution prevent the attainment of the use and cannot be remedied or would cause more environmental damage to correct than to leave in place
- Dams, diversions or other types of hydrologic modifications preclude the attainment of the use, and it is not feasible to restore the water body to its original condition or operate such modification in a way that would result in the attainment of the use
- Physical conditions related to the natural features of the water body, such as the lack of a proper substrate, cover, flow, depth, pools, riffles, and the like, unrelated to water quality, preclude attainment of aquatic life protection uses
- Controls more stringent than those required by sections 301(b) and 306 of the Act would result in substantial and widespread economic and social impact

**Supporting Evidence in the report (include comments on how complete/thorough data is)**

- Biological Data (fish/invert) br trout which appear to be naturally reproducing & mottled sculpin -> lots of fish data
- Chemical Data (temp, D.O., etc.) temp 0-20°C
- Physical Data (flow, depth, etc.)
- Habitat Description
- Site Description/Map - station 1 missing off map
- Other:

**Historical Reports in file:**

1/6/05 - J Amrhein

**Additional Comments/How to improve report:**

- ERW
- mottled sculpin decimated as went downstream - possibly due to proliferation of OTU spp?
- CW IBI: poor -> fair br trout w/in past 10 yrs (not stocked in S. River)